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CRPL-F167 PART A

FOR OFFICIAL USE

Reference should be made  
to the following report.

PART A  
IONOSPHERIC DATA

ISSUED  
JULY 1958

U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS  
CENTRAL RADIO PROPAGATION LABORATORY  
BOULDER, COLORADO



## IONOSPHERIC DATA

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## SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

- Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.  
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of  $f_oF_2$  (and  $f_oE$  near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of  $h'F$  (and  $h'E$  near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For  $f_oF_2$ , as equal to or less than  $f_oF_1$ .
2. For  $h'F_2$ , as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of  $fEs$  missing because of E or G are counted as equal to or less than the median  $f_oE$ , or equal to or less than the lower frequency limit of the recorder.

B for  $fEs$  is counted on the low side when there is a numerical value of a higher layer critical frequency; otherwise it is omitted from the median count.

S for  $fEs$  is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of  $fEs$  missing for any other reason, and values of  $h'Es$  missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.
- d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.



# PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
December	150*	150*	150	42	11	15	33	53	86	108	114
November	150*	150*	147	35	10	16	38	52	87	112	115
October	150*	150*	135	31	10	17	43	52	90	114	116
September	150*	150*	119	30	8	18	46	54	91	115	117
August	150*	150*	105	27	8	18	49	57	96	111	123
July	150*	150*	95	22	8	20	51	60	101	108	125
June	150*	150*	89	18	9	21	52	63	103	108	129
May	150*	150*	77	16	10	22	52	68	102	108	130
April	150*	150*	68	13	10	24	52	74	101	109	133
March	150*	150*	60	14	11	27	52	78	103	111	133
February	150*	150*	53	14	12	29	51	82	103	113	133
January	150*	150*	48	12	14	30	53	85	105	112	130

\*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1957.

## Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	196	198	200	198

## WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Meteorological Service of the Belgian Congo and Ruanda-Urundi:  
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio  
Research Board:  
Inverness, Scotland  
Slough, England

Defence Research Board, Canada:  
Baker Lake, Canada  
Churchill, Canada  
Ottawa, Canada  
Resolute Bay, Canada  
Victoria, Canada

Radio Wave Research Laboratories, National Taiwan University,  
Taipeh, Formosa, China:  
Formosa, China

Instituto Geofisico de Los Andes Colombianos:  
Bogota, Colombia

Danish National Committee of URSI:  
Narsarssuak, Greenland

The Finnish Academy of Sciences and Letters:  
Sodankyla, Finland

National Laboratory of Radio-Electricity (French Ionospheric  
Bureau):  
Poitiers, France

Heinrich Hertz Institute, German Academy of Sciences, Berlin:  
Juliusruh/Rügen, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover,  
Germany:  
Lindau/Harz, Germany

Central Institute of Meteorology, Budapest, Hungary:  
Budapest, Hungary



Icelandic Post and Telegraph Administration:  
Reykjavik, Iceland

Christchurch Geophysical Observatory, New Zealand Department  
of Scientific and Industrial Research:  
Campbell I.  
Cape Hallett (Adare)  
Christchurch, New Zealand  
Rarotonga, Cook Is.  
Scott Base

Norwegian Defence Research Establishment, Kjeller per  
Lillestrom, Norway:  
Oslo, Norway

Manila Observatory:  
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Prop-  
agation, Moscow, U.S.S.R.:  
Ashkhabad  
Chita  
Murmansk  
Rostov-on-Don  
Yakutsk  
Yuzhno-Sakhalinsk

Research Institute of National Defence, Stockholm, Sweden:  
Lycksele, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzer-  
land:  
Schwarzenburg, Switzerland

United States Army Signal Corps:  
Fletchers Ice I.  
Ft. Monmouth, New Jersey  
Grand Bahama I.  
Okinawa I.  
St. John's, Newfoundland  
Thule, Greenland  
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Labora-  
tory);  
Anchorage, Alaska  
Chiclayo, Peru  
Chimbote, Peru  
Huancayo, Peru (Instituto Geofisico de Huancayo)  
Maui, Hawaii

National Bureau of Standards (Central Radio Propagation Laboratory), continued:

Panama Canal Zone  
Point Barrow, Alaska  
Puerto Rico, W. I.  
Washington, D. C.

## EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS

Huancayo; February 17, 1958  
(Geomagnetic Latitude  $1^{\circ}\text{S}$ )

The following ionograms were obtained at the Huancayo vertical sounding station operated by Instituto Geofisico de Huancayo. They are typical of day and night conditions for February at this geomagnetic latitude. Ionospheric data are scaled directly from these records onto the daily f-plot, a graph of frequency characteristics vs. time. The f-plot for the day represented by these soundings is found on the following page. Medians as found in the Tables of Ionospheric Data are calculated using hourly values taken from the f-plot or directly from the ionogram.

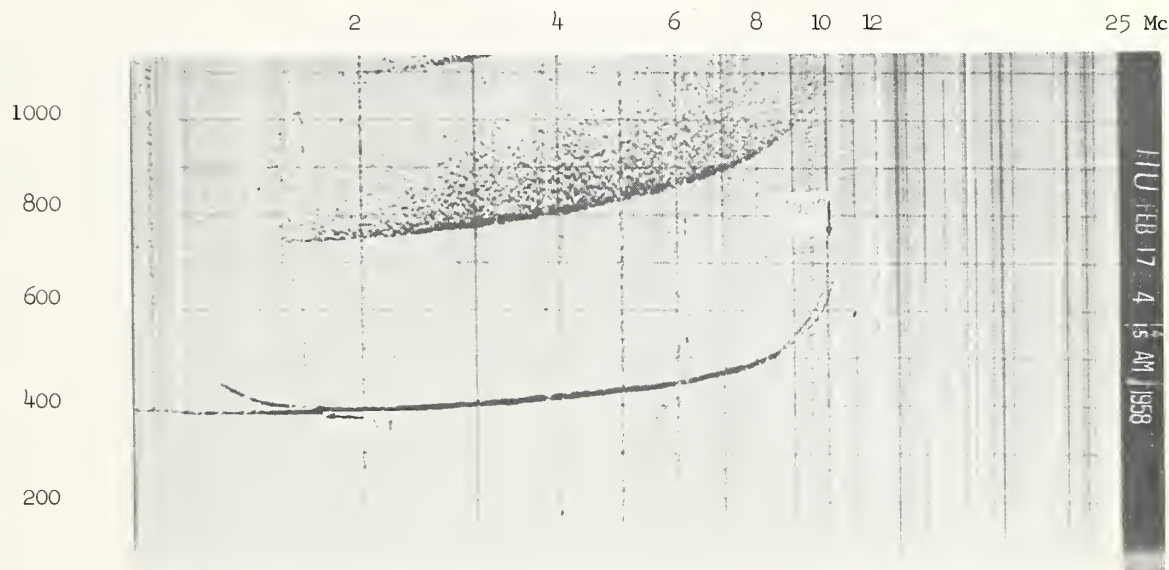


Fig. A. Huancayo, February 17, 1958, 0415 hours,  $75^{\circ}\text{W}$  time.

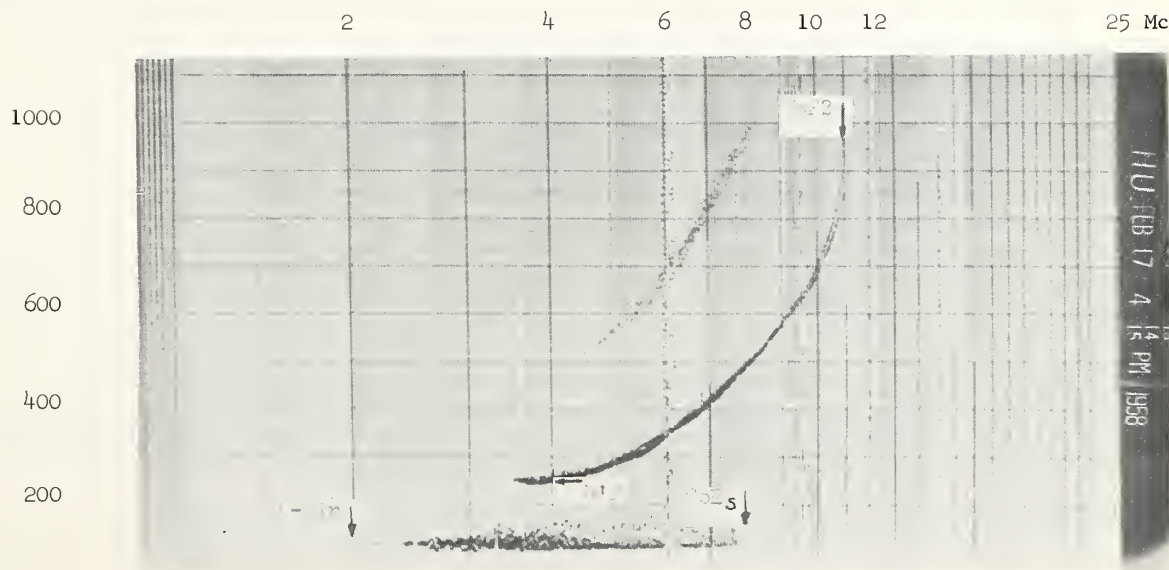
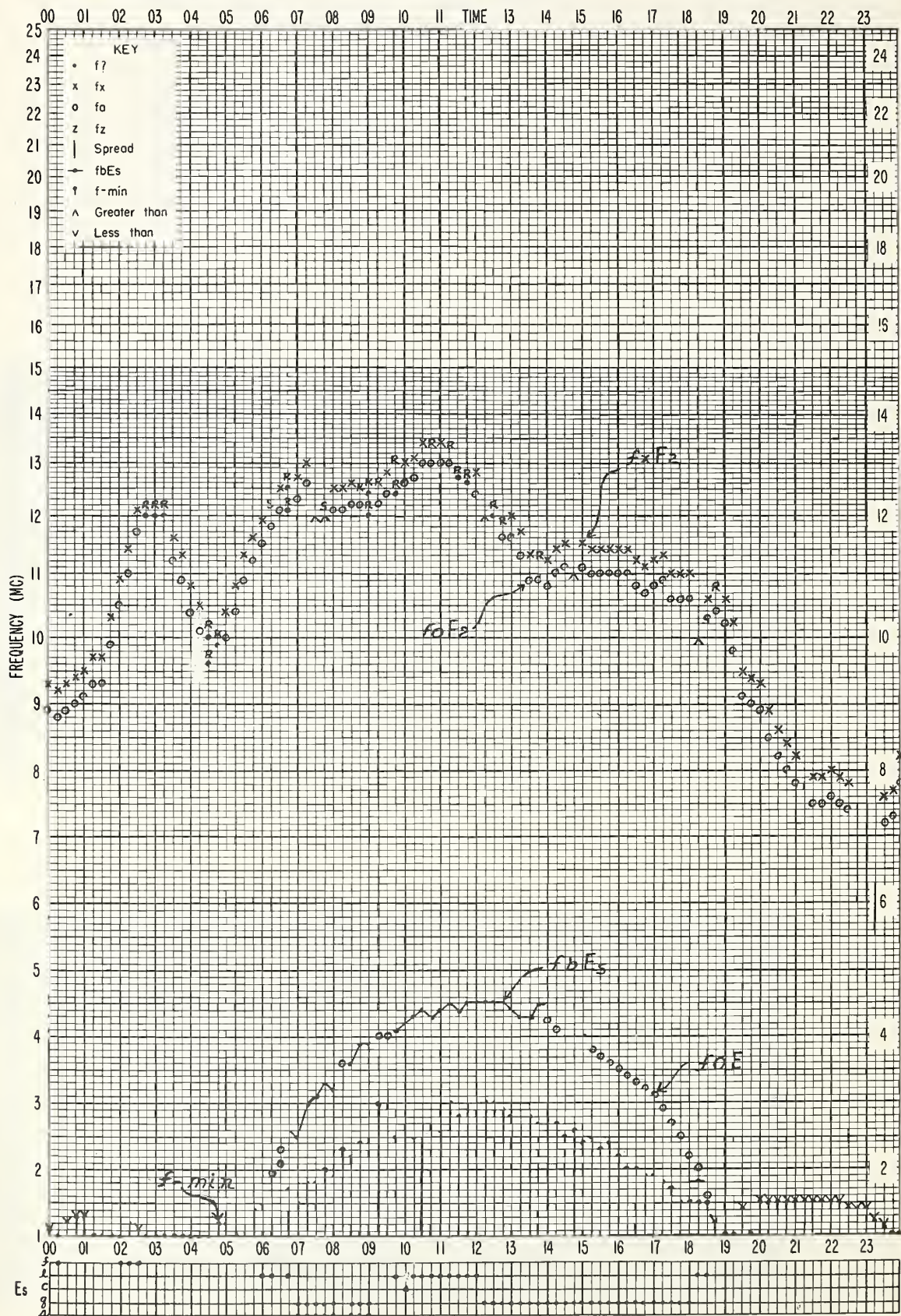


Fig. B. Huancayo, February 17, 1958, 1615 hours,  $75^{\circ}\text{W}$  time.

Huancayo, Peru

STATION ION HU

f - PLOT OF IONOSPHERIC DATA

DATE FEBRUARY 17, 1958SCALED BY ALSQ

CPL FORM 7-13 10-5-56

Commerce-Standards-Boulder, Colo.



# TABLES OF IONOSPHERIC DATA

April 1950 - August 1956

Table 1

Point Barrow, Alaska (71.3°N, 156.0°W)							
April 1950							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(6.1)	325	---	---	---	3.2 (2.45)
01		(5.8)	320	---	---	---	2.8 (2.42)
02		(6.0)	340	131	---	---	2.1 (2.35)
03		(6.0)	325	<137	---	---	(2.40)
04	---	(5.6)	350	---	135	(1.90)	(2.35)
05	(465)	(5.1)	325	3.4	122	(2.20)	2.32
06		530	(5.05)	<300	3.9	119	2.60 (2.25)
07		490	5.7	<300	4.0	113	3.02 2.28
08		520	5.6	(275)	4.4	121	3.12 2.30
09	(520)	6.2	(300)	4.9	113	3.40	2.35
10		555	6.35	<300	4.9	113	3.75 2.32
11		500	6.6	280	4.9	114	3.68 2.40
12		500	6.9	<265	5.0	115	(3.50) 2.30
13		610	6.8	260	4.9	117	3.40 2.25
14		520	7.2	260	5.0	117	3.30 2.30
15		400	7.7	(250)	4.9	113	3.25 2.35
16		465	8.0	<270	4.4	114	3.10 2.40
17		410	7.2	(260)	4.3	113	(2.90) 2.42
18	(450)		6.65	(285)	---	115	2.65 2.55
19	(450)		6.0	(305)	---	120	2.50 2.60
20	---		5.95	305	---	125	2.35 2.70
21			(6.0)	310	---	---	3.2 2.65
22			(5.5)	325	---	---	3.1 2.50
23			(4.95)	350	---	---	2.0 (2.40)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Anchorage, Alaska (61.2°N, 149.9°W)							
April 1950							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.8)					2.4 2.30
01		4.8					2.4 2.35
02		(4.9)					2.4 (2.30)
03		(5.0)					2.1 (2.30)
04		(5.2)			131	----	2.30
05		(5.5)		(3.5)	121	2.00	2.40
06		(6.1)		3.9	115	2.55	(2.40)
07		6.3		4.4	113	2.80	2.35
08		6.6		4.8	111	3.10	2.35
09		6.75		4.9	109	3.40	2.35
10		7.2		5.2	109	3.50	2.35
11		7.45		5.4	107	3.60	2.35
12		7.8		5.6	108	3.65	2.35
13		7.75		5.6	107	3.50	2.40
14		7.95		5.5	108	3.50	2.45
15		8.4		(5.3)	109	3.42	2.50
16		8.75		4.9	111	3.15	2.55
17		9.0		---	111	2.80	2.60
18		8.95			119	2.40	2.70
19		7.9			139	2.05	2.70
20		6.9			---	---	2.70
21		6.1					2.65
22		(5.0)					2.4 2.60
23		(4.0)					2.7 2.50

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Washington, D. C. (38.7°N, 77.1°W)							
April 1950							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		7.5	310				2.40
01		7.25	310				2.40
02		7.1	310				2.42
03		6.6	300				2.45
04		6.15	290				2.45
05		6.05	300				2.55
06		6.8	270		121	2.00	2.80
07		7.9	245	---	109	2.75	2.80
08	(410)	9.0	235	5.2	109	3.25	2.70
09		520	10.05	220	5.4	108	3.52 2.58
10		520	10.2	220	5.5	105	3.80 2.50
11		520	10.65	220	5.8	105	3.92 2.45
12		520	10.7	220	5.0	105	4.00 2.40
13		490	10.75	225	5.8	106	4.00 2.40
14		475	10.9	230	5.6	109	3.95 2.38
15		500	10.65	240	5.5	107	3.78 2.40
16		460	10.35	240	5.4	109	3.45 2.45
17	---		9.95	250	---	109	3.00 2.50
18	---		9.65	265	---	119	2.25 2.55
19			9.65	280	---	---	2.58
20			9.1	260			2.55
21			8.35	290			2.50
22			7.9	290			2.45
23			7.75	<305			2.42

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Maui, Hawaii (20.8°N, 156.5°W)							
April 1950							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		11.5	270				3.1 2.88
01		10.35	265				2.0 2.90
02		9.8	260				2.80
03		8.75	260				2.65
04		8.1	270				2.60
05		7.7	295				2.55
06		8.0	295		133	1.25	2.55
07		10.0	245		117	2.60	2.92
08		11.7	235		109	3.30	3.5
09		12.9	230		109	3.70	4.0
10		13.5	225		109	4.00	4.3
11	---	14.55	220	---	109	(4.20)	4.5
12	400	15.7	230	---	109	(4.30)	4.8
13	400	15.95	235	7.9	109	(4.30)	4.6
14	400	15.75	235	(8.0)	109	(4.15)	4.3
15	400	15.4	235	7.4	109	4.00	4.2
16	385	15.1	240	---	110	3.75	4.2
17	---	14.75	250	---	111	3.22	4.4
18		14.0	265		119	(2.40)	5.0
19		14.4	280				4.0 2.60
20		14.0	290				4.4 2.60
21		13.15	280				3.8 2.70
22		12.5	280				2.9 2.70
23		12.35	280				2.8 2.70

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Point Barrow, Alaska (71.3°N, 156.0°W)							
March 1950							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.7)	<300				2.0 ----
01		---	(315)				3.6 ----
02		(5.7)	325				2.3 ----
03		(4.2)	(340)				----
04		---	<395				2.0 ----
05		---	(395)				----
06		(5.6)	(390)				2.9 ----
07		---	(335)				(2.8) ----
08		(6.0)	---				----
09		---	---				----
10		(5.9)	---				(2.60) ----
11		---	---				----
12		---	(270)				----
13		(8.2)	<295				(2.80) ----
14		---	7.9	<285			2.70
15		---	8.5	<300			2.50
16		---	(9.1)	295			(2.70)
17		(5.4)	(270)				(2.70)
18		---	(330)				----
19		(5.35)	(350)				3.4 ----
20		---	(320)				3.5 ----
21		(4.9)	(340)				5.0 ----
22		---	<335				5.6 ----
23		(4.6)	<335				5.5 ----

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Note: For two days around equinox, height scale was expanded.

Table 6

Anchorage, Alaska (61.2°N, 149.9°W)							
March 1950							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.4)					2.5 2.30
01		(4.4)					3.2 (2.35)
02		(5.0)					2.4 (2.35)
03		(5.0)					2.2 (2.40)
04		(5.0)					(2.40)
05		(4.3)					(2.40)
06		(5.0)					(2.50)
07		(5.5)			121	2.30	2.65
08		(5.8)		4.7	125	2.80	2.80
09		7.0		---	119	2.90	2.80
10		7.2		5.0	120	3.00	2.80
11		7.2		4.9	116	3.25	2.70
12		8.2		5.0	115	3.25	2.70
13		8.9		---	117	3.20	2.65
14		9.5		4.9	119	3.10	2.65
15		10.2		---	121	3.00	2.70
16		10.5		---	129	2.75	2.75
17		10.3			135	2.35	2.75
18		9.8			---	---	2.05
19		8.2			---	---	2.85
20		5.7			---	---	2.70
21		4.8					2.4 2.70
22		(4.3)					2.0 (2.65)
23		(4.2)					2.4 (2.50)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Note: Around equinox, the height scale was expanded.

Table 7

St. John's, Newfoundland (47.6°N, 52.7°W)

March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.5)	340					(2.40)
01		(5.4)	340					(2.40)
02		5.0	340					2.40
03		(4.6)	325					(2.40)
04		(4.4)	310					(2.50)
05		(4.8)	300					(2.60)
06		6.1	270		121	2.20		2.90
07	---	7.8	250		119	2.00		3.00
08	---	8.6	235	---	112	3.10		2.90
09	---	9.6	230	---	111	3.40		2.80
10	---	10.2	220	---	110	3.50		2.75
11	---	10.4	230	---	111	3.70		2.70
12	---	10.9	235	---	113	3.80		2.60
13	---	11.0	230	---	111	3.70		2.60
14	---	11.0	230	---	113	3.60		2.55
15	---	11.0	240		115	3.25		2.60
16	---	11.0	250		115	2.90		2.70
17		11.0	255		129	2.50		2.70
18		9.9	260		---	---		2.70
19		8.6	260					2.60
20		7.9	265					2.60
21		6.6	300					2.50
22		5.3	340					2.40
23		(4.4)	350					(2.40)

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Note: The height scale was expanded around equinox.

Table 8

Maui, Hawaii (20.8°N, 156.5°W)

March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.2	245					3.00
01		10.6	240					2.90
02		9.1	250					2.90
03		8.0	240					2.90
04		7.2	245					2.80
05		5.8	260					2.70
06		5.8	290					2.50
07		8.1	265		132	2.20		2.90
08		10.9	240		115	3.00	3.2	3.00
09		13.0	230		113	3.50	3.0	2.80
10	---	14.4	230		111	3.85	4.2	2.80
11	---	15.5	230		109	4.00	4.5	2.70
12	(305)	15.8	230	---	111	(4.10)	4.4	2.60
13	375	16.0	235	---	111	(4.15)	4.3	2.60
14	360	16.5	240	---	111	(4.10)	4.4	2.60
15	365	16.3	245	---	111	3.95	4.1	2.60
16	(355)	15.0	240		115	3.65	4.1	2.60
17	---	15.0	250		<117	3.20	3.9	2.65
18		14.6	260		119	2.20	3.7	2.70
19		15.0	265				4.3	2.70
20		15.0	270				3.7	2.75
21		14.0	250				2.5	2.75
22		(14.0)	245				2.0	(2.80)
23		13.0	250				1.0	2.90

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Note: Around equinox, the height scale was expanded.

Table 9

Panama Canal Zone (9.4°N, 79.9°W)

March 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.0	260					2.95
01		10.4	240					2.95
02		8.5	240					2.75
03		6.9	260					2.60
04		6.6	285					2.50
05		6.0	280					2.60
06		6.0	330					2.45
07		9.6	260		129	2.40		2.05
08		12.3	245		112	3.15	3.6	2.08
09	---	14.0	240		110	3.70		2.78
10	---	14.5	235		109	4.00	4.3	2.75
11	---	14.7	235		109	4.25		2.65
12	---	14.9	245		110	4.30	4.6	2.55
13	425	15.05	240	---	109	4.30		2.55
14	395	15.75	240	---	109	4.25		2.50
15	395	15.7	<265		109	4.00	4.4	2.50
16	(375)	15.15	<275		115	3.60	4.6	2.52
17	---	14.75	275		109	3.00	4.5	2.50
18		14.0	290		117	2.30	3.9	2.50
19		14.2	280				3.0	2.55
20		15.5	290					2.55
21		14.4	260				2.3	2.62
22		13.1	255					2.60
23		12.6	265					2.75

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Fletchers Ice I. (80.0°N, 112.0°W)\*

February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.8)	250					(2.70)
01		(7.65)	260					(2.70)
02		(6.3)	265					(2.60)
03		(7.15)	250					(2.80)
04		(7.0)	260					(2.80)
05		(5.0)	250					(2.75)
06		(5.5)	265					(2.70)
07		(5.5)	260					(2.55)
08		(5.4)	260					(2.70)
09		(4.8)	260					(2.80)
10		(6.0)	260		---	---		(2.75)
11		(6.6)	260		131	(1.28)		(2.80)
12		(7.25)	250		(115)	(1.40)		(2.85)
13		7.3	255		(113)	(1.52)		2.80
14		(7.2)	<270		(115)	1.55		2.72
15		(7.35)	255		(115)	(1.50)		(2.82)
16		(7.2)	250		(125)	1.58		(2.70)
17		(7.6)	260		(111)	(1.50)		(2.75)
18		(7.2)	250		(119)	1.40		(2.70)
19		(5.8)	260		---	---		(2.65)
20		6.8	270					2.70
21		(7.0)	250					(2.65)
22		(7.8)	260					(2.60)
23		(5.6)	265					2.72

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

\*Preliminary estimated average position.

Table 11

Thule, Greenland (76.6°N, 68.7°W)

February 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.4)	260					(2.60)
01		(6.0)	265					(2.00)
02		(6.0)	275					(2.65)
03		(5.4)	285					(2.75)
04		---	270					---
05		(5.2)	270					(2.75)
06		(5.5)	270					---
07		5.6	270		---	---		(2.70)
08		(5.0)	260		---	---		(2.85)
09		(6.6)	265		---	---		2.80
10		7.1	265		---	---		2.80
11		(7.2)	260		---	---		(2.80)
12		(7.9)	255		---	---		(2.85)
13		(7.2)	265		---	---		(2.70)
14		(7.3)	270		---	---		(2.75)
15		(9.5)	255					2.75
16		(0.0)	260					(2.75)
17		(0.0)	250					(2.75)
18		(0.2)	250					(2.80)
19		(6.8)	230					(2.60)
20		(5.0)	260					(2.60)
21		6.6	250					(2.65)
22		(5.4)	270					(2.55)
23		(5.4)	270					(2.60)

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Resolute Bay, Canada (74.7°N, 94.9°W)

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.6	280					---
01		5.2	280					---
02		5.5	280					---
03		(5.1)	280					(2.5)
04		4.7	200					(2.6)
05		4.2	290					---
06		4.8	290		---	---		---
07		5.0	200		---	---		(2.5)
08		5.3	270		140	1.4	1.4	(2.6)
09		6.3	270		160	1.7	1.8	(2.6)
10		7.0	270		120	1.8		(2.7)
11		7.0	270		120	1.8		(2.8)
12		7.8	270		110	1.9		(2.0)
13		7.9	280		110	1.9		2.7
14		8.0	280		---	---		---
15		8.2	270		120	1.7		(2.7)
16		7.0	270		---	---		---
17		6.5	270		---	---		---
18		6.5	270		---	---		---
19		6.2	280		---	---		---
20		6.0	200					---
21		5.5	270					---
22		5.4	280					---
23		5.0	280					---

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.



Table 13

Point Barrow, Alaska (71.3°N, 156.8°W) February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.5)	290				3.0 (2.58)
01		(5.15)	320				6.8 ----
02		(4.6)	<335				3.7 ----
03		(5.7)	345				4.2 (2.40)
04		(4.4)	360				3.6 ----
05		(5.0)	340				2.9 ----
06		(4.4)	370				3.3 ----
07		(5.1)	355				3.0 ----
08		(5.05)	(350)				>3.1 (2.65)
09		(5.6)	330				3.2 ----
10		(6.45)	290				(2.00)
11		6.0	280				2.80
12		7.4	(270)				2.85
13		7.6	275				2.85
14		8.4	260				2.00
15		9.85	270				2.80
16		10.3	260				2.85
17		>9.0	270				2.90
18		(7.0)	300				1.8 2.05
19		(5.15)	300				2.6 (2.80)
20		(4.4)	295				3.4 ----
21		(4.8)	310				3.7 ----
22		(4.7)	310				4.0 (2.70)
23		(4.65)	280				4.2 (2.45)

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Paker Lake, Canada (64.3°N, 96.0°W) February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		5.0	260				4.5
01		(5.7)	270				4.2
02		4.9	290				4.0
03		4.8	200				4.5
04		4.2	300				3.8
05		4.2	330				4.0
06		4.0	310				3.9
07		4.0	320		120	2.1	4.0
08		4.6	310		120	2.2	4.0
09		4.0	270		130	2.3	4.3
10		5.0	230		120	2.7	3.3
11		6.2	270		120	2.9	
12	---	6.9	270	---	120	3.0	
13	---	8.6	270	---	120	2.8	(2.7)
14	---	9.8	260	---	120	2.8	(2.8)
15	---	8.4	260	---	120	2.4	
16	---	8.0	260	---	130	2.2	
17		7.4	260		130	2.2	3.6
18		(6.3)	280		130	2.1	4.0
19		6.0	230		130	2.0	3.8
20		6.0	280		130	1.0	4.2
21		5.9	270		---	1.6	4.9
22		5.8	230		---	---	4.5
23		5.5	280		---	---	5.0

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 15

Reykjavik, Iceland (64.1°N, 21.8°W) February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.6)	410				3.8 (2.35)
01		>4.65	400				3.7 ----
02		---	400				3.5 ----
03		---	<410				3.6 ----
04		>5.0	390				>2.9 (2.50)
05		(5.5)	360				---
06		(4.75)	330				---
07		(4.05)	305				(2.70)
08		5.6	300				2.78
09		6.9	275				2.85
10	---	8.55	260				2.05
11	---	9.8	250				2.00
12	---	10.6	250				2.62
13	---	11.0	250				2.90
14	---	10.4	250				2.90
15		9.0	250				2.90
16		7.5	270				2.85
17		(7.2)	290				(2.95)
18		>5.55	325				2.8 (2.80)
19		>6.35	290				3.65 (2.85)
20		>6.0	350				4.0 ----
21		(5.9)	330				4.25 ----
22		>5.7	360				3.5 ----
23		---	360				3.75 ----

Time: 15.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 16

Narsarsuaq, Greenland (61.2°N, 45.4°W) February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.9)	(350)				4.9 (2.50)
01		(4.9)	370				3.0 (2.50)
02		(4.6)	(370)				3.6 (2.50)
03		(4.9)	(375)				3.5 (2.50)
04		(4.7)	300				3.5 (2.50)
05		(4.9)	350				3.5 (2.60)
06		(4.7)	370				3.4 (2.60)
07		(5.0)	320			---	2.0 (2.70)
08		(6.3)	200			---	(2.95)
09		8.2	260			127	2.25
10		9.6	255			120	2.58
11	---	11.1	250	---		121	2.70
12	---	11.6	245	---		119	2.75
13	---	10.3	250	---		119	2.75
14	---	8.6	250			121	2.72
15	---	7.9	260			125	2.50
16	---	(7.0)	200			125	2.20
17		(6.5)	205			---	>2.4 (2.90)
18		(5.95)	315			---	>3.0 (2.05)
19		(6.0)	330			---	>3.6 (2.60)
20		(5.5)	330			---	6.4 (2.60)
21		(5.3)	325			---	3.0 (2.55)
22		(5.7)	(340)			---	4.6 (2.42)
23		(5.35)	(370)			---	5.7 (2.45)

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Churchill, Canada (58.8°N, 94.2°W) February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		5.1	310				5.0
01		5.2	310		125	2.0	4.6
02		5.0	310		130	2.0	4.4
03		4.7	320		140	2.0	4.6
04		4.4	320		130	1.8	4.4
05		4.6	340		125	2.2	4.2
06		4.6	360		115	2.1	4.4
07		4.7	340		120	2.8	4.5
08		5.8	310		120	2.8	4.5
09		6.8	290		110	3.0	4.3
10		7.3	280		130	3.0	4.2
11	---	8.2	270	---	120	3.0	3.2
12	---	9.3	250	---	120	3.0	3.4
13	---	11.0	250	---	125	3.0	3.4
14	---	11.9	260	---	125	3.0	4.3
15	---	10.6	260	---	120	2.8	4.4
16	---	0.3	250	---	125	2.5	4.3
17		7.3	270		130	2.2	4.0
18		6.3	300		125	2.4	4.3
19		6.0	290		120	2.4	4.8
20		6.0	330		120	2.5	5.0
21		5.9	320		125	2.3	4.7
22		5.5	300		135	2.0	5.0
23		5.0	300		120	2.0	5.0

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 18

St. John's, Newfoundland (47.6°N, 52.7°W) February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(5.8)	305				(2.50)
01		(5.65)	315				(2.50)
02		(5.7)	315				(2.62)
03		(5.9)	300				(2.60)
04		(5.5)	285				(2.60)
05		(5.05)	280				(2.62)
06		(5.0)	260				(2.72)
07		7.4	240			(121)	2.20
08		10.0	230			119	2.60
09		11.6	225			115	3.00
10		12.85	225			111	3.28
11		13.6	225			113	3.40
12	---	13.5	220	---		113	3.45
13	---	13.4	225	---		111	3.40
14	---	13.45	230	---		111	3.10
15	---	13.1	230	---		115	2.80
16	---	12.8	230	---		(121)	2.40
17		11.75	230			---	2.90
18		9.3	245			---	2.90
19		6.6	260			---	2.80
20		6.8	265			---	2.80
21		7.3	275			---	2.70
22		6.9	290			---	2.60
23		(5.9)	300			---	(2.50)

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	290					(2.7)
01		5.1	290					---
02		5.2	310					(2.8)
03		5.2	300					---
04		5.1	300					(2.7)
05		5.2	290					(2.75)
06		4.8	290					---
07		5.9	270					(2.95)
08		0.6	240		120	2.5		3.0
09		11.0	240		110	3.0		3.0
10		12.4	230		110	3.2		2.95
11		13.2	230		110	3.4		(2.9)
12	---	13.3	230	---	110	3.5		---
13	---	13.5	230	---	110	3.5		---
14		13.0	230		110	3.3		---
15		13.8	240		110	3.0		(2.8)
16		13.6	240		110	2.7		---
17		13.2	240		120	2.1		---
18		12.2	230		---	---		---
19		10.2	230					---
20		9.0	260					---
21		7.7	250					(2.0)
22		6.0	270					(2.8)
23		6.8	290					---

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 21

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.6	265					2.70
01		5.5	275					2.65
02		5.2	(285)					2.65
03		4.9	(285)					2.70
04		4.75	290					2.60
05		4.5	<300					2.60
06		4.45	<300					2.65
07	---	7.05	250	---	<132	1.90		3.00
08	---	10.5	230	---	109	2.72	2.0	3.15
09	---	12.7	230	---	109	3.30	3.4	3.10
10	---	13.7	225	---	109	3.62	3.0	3.00
11	---	14.1	220	---	111	3.02	4.0	2.95
12	---	14.0	225	---	111	3.95	4.1	2.85
13	---	14.0	230	---	111	3.90		2.80
14	---	13.0	230	---	111	3.75	3.0	2.75
15	---	13.6	230	---	111	3.50	3.9	2.75
16		13.2	235		111	3.10	3.4	2.75
17		12.95	235		115	2.50	2.5	2.85
18		12.3	230		---	---	2.0	2.90
19		10.3	220					2.90
20		9.0	230					2.95
21		7.6	230					2.95
22		6.55	245					2.05
23		6.0	250					2.05

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		10.55	240					2.95
01		9.35	235					3.00
02		8.5	230					2.92
03		7.0	240					3.00
04		5.5	245					2.70
05		5.2	<270					2.70
06		4.6	290					2.75
07		7.0	275					2.95
08		11.0	240		119	(2.65)		3.20
09		13.0	235		112	(3.25)		3.15
10		14.05	230		111	3.60	3.7	2.95
11	---	14.95	220	---	113	(3.85)	4.1	2.90
12	---	15.05	220	---	113	4.00	>4.0	2.75
13	(355)	16.5	220	---	111	4.00	4.0	2.75
14	(360)	17.0	225	---	111	3.95	4.2	2.65
15	(360)	16.5	230	---	111	3.80		2.70
16	---	16.4	235	---	111	3.45	3.7	2.70
17	---	15.1	245	---	117	(2.90)	3.2	2.72
18		14.5	250				2.4	2.80
19		14.3	250					2.82
20		14.5	250					2.80
21		14.5	235					2.05
22		13.3	240					2.02
23		11.85	245					2.90

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.7	270					2.75
01		6.3	(270)					2.70
02		6.0	(275)					2.70
03		6.0	<280					2.60
04		5.7	(270)					2.70
05		5.4	260					2.70
06		5.2	<255					2.70
07		6.9	240					3.05
08		10.3	230		109	2.70		3.20
09		12.1	220		109	3.10		3.15
10		13.2	220		111	3.50		3.10
11	---	13.25	220	---	109	3.65		3.00
12	---	13.6	220	---	109	3.70		2.90
13	---	13.4	220	---	109	3.65		2.85
14	---	13.5	220	---	109	3.58		2.90
15	---	>13.0	225	---	109	3.20		2.85
16		13.0	230		109	2.00		2.90
17		13.0	230		119	---		2.95
18		12.15	220					2.92
19		10.5	220					2.90
20		9.1	225					2.85
21		0.2	235					2.85
22		7.35	245					2.80
23		6.85	260					2.75

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		7.25	<255					2.80
01		6.65	<255					2.90
02		6.4	(250)					2.88
03		5.9	<255					2.80
04		5.5	<260					2.70
05		5.5	<290					2.70
06		5.7	<265					2.00
07		7.9	240		<159	2.10		3.10
08	---	10.8	230	---	111	(2.80)		3.15
09	---	12.6	225	---	109	3.35		3.05
10	---	13.55	220	---	109	(3.65)		3.00
11	---	13.75	220	---	109	(3.95)		2.92
12	---	13.0	220		109	4.00	4.2	2.80
13	---	13.8	215		109	(4.00)	4.0	2.75
14	---	13.4	220		109	3.95	4.0	2.72
15		13.3	225		109	3.65	3.6	2.70
16		13.1	230		109	3.32	3.5	2.75
17		13.0	235		111	(2.75)	3.2	2.80
18		12.25	230		---	---	2.8	2.85
19		11.0	<220				2.6	2.82
20		9.7	<235				1.9	2.85
21		8.5	<245					2.85
22		7.05	<250					2.85
23		7.6	<260					2.05

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24

February 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		8.1	250					2.90
01		7.95	245					2.95
02		7.25	240					3.10
03		6.0	230					2.95
04		5.55	265					2.65
05		5.4	285					2.60
06		5.45	245					2.82
07		7.1	250		---	---		3.10
08		10.0	235		113	2.70		3.25
09		13.05	230		109	3.30		3.15
10	---	13.5	220	---	109	3.70	3.8	3.05
11	---	13.85	220	---	109	(3.90)	4.1	2.92
12	---	13.0	215	---	109	4.00	4.2	2.05
13	---	13.7	220	---	109	(4.00)	>4.2	2.75
14	---	13.5	225	---	109	(3.98)	4.2	2.72
15		13.2	220	---	109	(3.80)	4.1	2.70
16		13.05	230		109	3.45	4.0	2.68
17		13.0	240		109	2.95	3.2	2.75
18		12.75	240		---	---	2.6	2.05
19		11.55	230					2.90
20		10.2	230					2.05
21		9.35	245					2.00
22		9.35	250					2.05
23		8.65	250					2.90

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Baguio, P. I. (16.4°N, 120.6°E) February 1950								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.8	270					2.72
01		11.0	270					2.70
02		9.4	260					2.75
03		7.8	260					2.70
04		6.7	270				2.2	2.70
05		5.2	200					2.62
06		5.2	310					2.55
07		9.4	310					2.60
08		12.6	290	---	129	3.08	3.8	2.58
09	---	14.2	275	---	125	3.55	4.0	2.40
10	---	14.7	260	---	125	3.00	4.4	2.20
11	---	13.95	250	---	124	3.95	4.8	2.10
12	---	13.65	250	---	125	4.00	4.4	2.05
13	---	13.4	<260	---	125	(4.00)	4.5	2.10
14	---	13.85	260		125	3.90	4.3	2.10
15	---	14.15	270		125	3.75	4.7	2.15
16		(14.5)	280		127	3.28	4.6	(2.20)
17		14.35	300		131	(2.70)	4.0	2.20
18		14.3	330		---	---	3.0	2.20
19		13.5	410					2.10
20		(13.05)	400					(2.20)
21		(13.6)	320					(2.40)
22		14.0	290					2.50
23		14.0	270					2.70

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 27

Huancayo, Peru (12.0°S, 75.3°W) February 1950								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.2	250				3.0	2.02
01		9.4	240				3.2	2.05
02		0.65	255				2.6	2.90
03		9.0	265					2.90
04		0.3	245				4.0	2.95
05		7.7	235					3.05
06		0.0	260		---	---	4.0	2.92
07		11.2	250		116	2.72	5.0	2.92
08		13.0	235		111	3.40	7.6	2.72
09		>14.0	225		110	(3.00)	8.0	2.55
10		>13.9	215		109	(4.20)	8.0	2.40
11		13.2	210		109	(4.40)	8.0	2.25
12		12.2	210		---	(4.40)	8.0	2.20
13		12.2	210		109	4.40	8.0	2.25
14		12.2	210		109	4.20	8.0	2.20
15		12.5	215	---	109	4.00	8.0	2.15
16		>12.2	230		109	(3.60)	6.0	2.15
17		12.5	250		111	(3.15)	7.1	2.22
18		12.25	275		---	---	5.8	2.10
19		11.6	345		---	E		2.22
20		11.2	390					2.15
21		11.3	320					2.32
22		11.7	290					2.55
23		11.4	245					2.72

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 29

Sodankylä, Finland (67.4°N, 26.6°E) January 1950								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			300				3.9	
01			300				3.8	
02			360				3.5	
03			350				3.0	
04			335				2.0	
05			310				2.5	
06			270				2.6	
07			265				2.4	
08			280				2.4	
09		---	265			E	2.8	---
10		(9.0)	250			E	3.3	(2.85)
11		10.9	250			2.00	3.5	2.90
12		12.7	230			2.20	3.5	2.90
13		13.6	230			2.05	3.8	2.95
14		13.7	230			1.95	3.5	2.90
15		12.0	230			1.65	2.9	2.95
16		11.2	230			E	2.0	2.95
17		(8.2)	245			---	2.4	(2.85)
18		---	270				2.7	---
19		---	290				2.9	---
20		---	315				3.0	---
21			350				3.1	
22			400				3.4	
23			375				3.8	

Time: 30.0°E.

Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 26

Panama Canal Zone (9.4°N, 79.0°W) February 1950								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.7	230					3.10
01		9.05	225					3.15
02		6.7	215					3.08
03		5.35	220					2.90
04		4.0	245					2.65
05		4.1	290		---	---	1.8	2.65
06		4.15	<305		---	---	1.8	2.55
07		0.45	260		138	2.30		3.00
08		11.95	240		111	3.00		3.05
09		13.95	225		107	3.55		3.00
10	---	14.25	220		107	3.90		2.90
11		14.6	210		107	4.10		2.75
12	(370)	15.05	210	---	105	4.20	4.3	2.70
13	390	15.1	225	---	107	4.20		2.65
14	300	15.0	225	---	105	4.02	4.4	2.60
15	385	15.5	230	---	105	3.90	4.1	2.60
16	(360)	15.0	230		106	3.50		2.60
17		14.55	240		111	3.05	3.6	2.60
18		14.0	250		122	2.20	3.0	2.70
19		(13.0)	235				2.6	(2.00)
20		(13.0)	230				2.2	2.75
21		(11.7)	250					(2.70)
22		11.5	245					2.00
23		10.85	240					2.90

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20

Fletchers Ice I. (79.0°N, 116.0°W)* January 1950								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.8)	250					(2.70)
01		(6.0)	260					(2.50)
02		(4.9)	260					(2.65)
03		(5.6)	260					(2.70)
04		(5.6)	250					---
05		(5.7)	250					---
06		(6.0)	255					(2.80)
07		(6.0)	250					(2.00)
08		(5.3)	260					(2.70)
09		(4.9)	260					---
10		(4.9)	250					---
11		(5.1)	240					(2.75)
12		(5.2)	245					(2.80)
13		(8.0)	240					(2.00)
14		(5.8)	240					(2.05)
15		---	240					---
16		(6.7)	245					(2.75)
17		(5.2)	255			---	---	(2.70)
18		(4.4)	260					(2.50)
19		(4.6)	250					---
20		(5.5)	250					(2.70)
21		(6.3)	250					(2.90)
22		(6.5)	255					(2.70)
23		(6.0)	260					---

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

\*Preliminary estimated average position.

Table 30

Lycksele, Sweden (64.6°N, 10.0°E) January 1950								
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00			5.2	330			2.4	2.4
01			5.5	330			2.2	2.5
02			5.9	330			2.1	2.4
03			5.6	310				2.45
04			5.8	290				2.6
05			5.4	265			1.8	2.6
06			5.1	255				2.7
07			4.9	265				2.6
08			5.7	255		---	E	2.6
09			8.2	250		125	1.75	2.9
10			10.8	240		105	1.95	3.0
11			12.5	240		105	2.10	3.1
12			13.4	235		---	2.20	3.1
13			13.4	230		---	2.10	3.2
14			12.8	230		105	1.85	3.2
15			11.7	220		140	1.55	3.1
16			10.3	220		---	E	3.0
17			8.3	220		---	---	2.95
18			5.6	240				2.8
19			5.0	270				2.7
20			5.0	280				2.7
21			4.9	300			2.3	2.6
22			5.2	310			2.5	2.5
23			5.1	350			2.4	2.5

Time: 15.0°E.

Sweep: 0.4 Mc to 16.0 Mc in 6 minutes, automatic operation.

Table 31

Reykjavik, Iceland (64.1°N, 21.8°W)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	---	---	370				4.4	----	
01	---	---	410				3.6	----	
02		(5.0)	405				3.4	----	
03	---	---	370				3.8	----	
04		(6.7)	340				3.6	(2.70)	
05		(6.8)	290				3.0	----	
06		(6.0)	300					(2.65)	
07		(5.9)	300					(2.75)	
08		(5.8)	300					(2.70)	
09		(6.5)	270					(2.80)	
10		9.2	250		---	----		2.90	
11		(11.8)	250		---	----		(2.90)	
12	---	>12.9	240		---	----		2.90	
13		13.0	240		<143	(2.30)		(2.90)	
14		>12.55	240		<141	2.20		(2.95)	
15		(10.75)	240		(141)	2.02		(2.90)	
16		(8.7)	270		131	(1.60)		(2.85)	
17		(5.7)	300					(2.90)	
18		(5.0)	300				2.9	(2.75)	
19		(4.3)	350				2.9	(2.70)	
20		(4.95)	<330				3.5	(2.90)	
21		>5.2	<340				4.2	----	
22		(6.1)	355				3.5	----	
23		---	370				4.2	----	

Time: 15.0°N.

Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 33

Inverness, Scotland (57.4°N, 4.2°W)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.7	345				<1.2	2.6	
01		4.4	340				<1.2	2.6	
02		4.0	340				<1.2	2.6	
03		4.2	335				<1.3	2.6	
04		4.0	315				<1.4	2.65	
05		4.2	300				<1.3	2.7	
06		4.0	300				<1.4	2.8	
07		3.7	280				<1.3	2.85	
08		5.8	250				1.8	2.95	
09		8.3	250		130	2.00	2.7	3.25	
10		11.9	250		130	2.45		3.2	
11		13.6	240		130	2.65		3.2	
12		14.2	240		125	2.80		3.15	
13		14.6	245		125	2.80		3.15	
14		14.2	245		125	2.60		3.15	
15		13.9	240		130	2.40		3.1	
16		13.2	235		150	1.90		3.15	
17		11.8	220				<1.6	3.1	
18		8.6	225				<1.6	3.1	
19		7.4	250				<1.6	3.0	
20		6.6	250				<1.6	3.0	
21		5.5	260				<1.6	2.9	
22		4.8	290				<1.6	2.65	
23		4.6	310				<1.4	2.6	

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 35

White Sands, New Mexico (32.3°N, 106.5°W)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		5.3	250					2.90	
01		4.8	265					2.80	
02		4.6	270					2.65	
03		4.3	<290					2.60	
04		4.0	<285					2.60	
05		3.9	(300)					2.55	
06		3.9	<290				2.4	2.75	
07		6.6	250					2.90	
08		10.0	230		119	2.60		3.10	
09		12.3	230		111	3.20	3.3	3.05	
10		13.5	230		107	3.50	3.8	2.95	
11	---	13.0	225		111	3.00	4.0	2.80	
12	---	12.5	220		111	3.95		2.70	
13	---	13.0	225		109	3.00		2.60	
14	---	12.7	230		109	3.70		2.55	
15	---	12.5	230		111	3.40	3.5	2.55	
16		12.1	240		111	3.00	3.0	2.60	
17		11.8	240		(129)	2.30		2.70	
18		11.0	<240				3.0	2.70	
19		9.7	230					2.80	
20		8.6	240					2.80	
21		7.4	240					2.90	
22		6.6	250					2.90	
23		6.0	250					2.90	

Time: 105.0°N.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 32

Oslo, Norway (60.0°N, 11.1°E)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.0	335					2.40	
01			370					2.30	
02		3.6	350					2.40	
03		3.6	330				1.2	2.40	
04		3.9	305				2.4	2.40	
05		3.7	290				1.3	2.40	
06		3.4	295					2.50	
07		3.6	260					2.55	
08		5.0	250				1.3	2.70	
09		8.2	250		115	1.85	2.6	2.60	
10		11.4	250		115	2.20	2.4	2.85	
11		>13.0	240		120	2.50		2.85	
12		>14.0	240		130	2.65		2.85	
13		>14.0	240		130	2.65		(2.85)	
14		>13.5	240		135	2.45		(2.90)	
15		>12.6	240		---	2.20		(2.90)	
16		>12.2	230		---	1.80		(2.85)	
17		11.0	215					2.85	
18		8.7	225					2.70	
19		6.9	250					2.70	
20		6.0	255					2.55	
21		5.3	260					2.55	
22		4.4	290					2.40	
23		4.2	315					2.40	

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 34

Schwarzenburg, Switzerland (46.8°N, 7.3°E)								January 1950	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	300	5.4						2.8	
01	300	5.5						2.7	
02	300	5.6						2.9	
03	300	5.2						2.9	
04	290	5.0						3.0	
05	270	4.9						3.0	
06	280	3.0						3.0	
07	260	3.8						3.1	
08	210	7.6						3.2	
09	210	11.0			100	2.4		3.4	
10	210	14.4			100	2.8		3.4	
11	200	14.6			100	3.1		3.4	
12	200	14.3			100	3.2		3.3	
13	200	14.0			100	3.2		3.1	
14	210	14.2			100	3.2		3.1	
15	210	14.0			100	3.0		3.2	
16	210	13.2			100	2.6		3.2	
17	220	12.0			---	---		3.2	
18	210	11.2						3.3	
19	210	9.2						3.3	
20	220	7.2						3.1	
21	250	6.7						3.0	
22	260	6.2						3.0	
23	270	5.6						3.0	

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 36

Okinawa I. (26.3°N, 127.0°E)								January 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		10.7	245					2.85	
01		9.8	245					2.90	
02		8.4	230					2.95	
03		6.7	240					2.95	
04		5.4	230					2.60	
05		5.1	(290)					2.55	
06		5.1	<300					2.68	
07		7.1	280					2.85	
08		11.5	245		119	(2.60)		3.10	
09		13.7	240		111	(3.20)		3.05	
10		14.4	235		111	3.58	4.0	2.90	
11		14.6	230		111	>3.00	4.4	2.70	
12	(425)	15.1	230	7.7	111	3.95	4.7	2.55	
13	430	15.3	230	7.3	111	3.90	4.5	2.45	
14	425	15.5	230	7.0	113	3.90	4.1	2.45	
15	420	15.4	235	(6.5)	115	3.70	4.3	2.50	
16	---	(15.5)	245		116	3.30	3.9	(2.50)	
17	---	>15.0	255		120	2.70	3.4	2.55	
18		(14.5)	265				3.6	2.65	
19		(14.5)	270					2.70	
20		(14.7)	255					(2.75)	
21		(14.2)	235					(2.85)	
22		13.2	230					2.85	
23		11.5	240					2.85	

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.



Formosa, China (25.0°N, 121.5°E) **Table 37** January 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.0	240					2.90
01		10.3	230					3.00
02		0.0	230					2.95
03		6.6	220					2.95
04		5.2	(250)					2.55
05		5.4	<280					2.60
06		6.0	200					2.70
07		10.5	260			---		3.00
08		13.0	240		2.9	3.4		3.10
09		14.0	230		3.5	4.0		2.90
10		15.2	230		---	4.4		2.70
11		15.2	230		---	4.8		2.55
12		15.7	230		---	4.2	4.0	2.50
13	(440)	16.4	230	---	---	4.1	4.6	2.45
14	---	16.1	230	---	---	4.0	4.5	2.40
15		16.1	240			3.7	4.1	2.45
16		16.2	240			3.2	3.9	2.50
17		15.6	260			(2.5)	3.2	2.55
18		15.5	200				3.1	2.60
19		15.9	200				2.4	2.70
20		15.8	260					2.80
21		14.9	230					2.90
22		13.0	230					2.00
23		12.1	240					2.85

Time: 120.0°E.

Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Puerto Rico, W. I. (10.5°N, 67.2°W) **Table 38** January 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		0.2	250					2.90
01		7.7	240					3.05
02		6.4	235					3.00
03		5.1	245					2.05
04		4.0	(300)					2.50
05		5.0	(200)					2.65
06		5.2	250					2.90
07		7.4	260				(2.6)	3.00
08		11.6	240			109	2.60	3.10
09	---	13.5	230			109	3.25	3.10
10	---	13.6	225			109	3.65	3.0
11	---	12.0	215			109	3.90	4.1
12	---	12.7	210			109	4.00	4.3
13	(385)	12.0	220	6.9	(7.2)	109	4.00	4.2
14	---	12.3	230			109	4.00	4.2
15	---	12.1	230	7.1		109	3.90	2.50
16	---	12.0	230			109	3.55	2.50
17		12.0	245			113	2.95	3.0
18		11.0	260					2.2
19		10.9	240				1.9	2.70
20		10.1	250					2.75
21		9.5	250					2.75
22		9.0	240					2.00
23		0.3	250					2.00

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Sancti, P. I. (16.4°N, 120.6°E) **Table 39** January 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.5	275					2.60
01		10.2	265				1.7	2.70
02		8.7	260					2.90
03		7.2	260					2.65
04		6.7	270					2.60
05		6.35	270					2.65
06		5.95	290		---	---	(3.0)	2.60
07		10.4	305		131	2.40		2.65
08		13.4	290		121	3.10	3.7	2.65
09		14.7	265		119	(3.65)	4.0	2.50
10		14.0	250		119	(3.90)	4.7	2.22
11	---	13.4	235	---	119	(4.00)	5.0	2.02
12	---	12.5	245	---	119	(4.03)	5.1	2.00
13	---	12.0	250	---	119	4.05	4.9	2.00
14	---	12.45	260	6.9	121	3.95	4.6	2.00
15		12.6	270	---	<121	3.70	4.2	2.00
16		12.8	290		<123	3.30	3.6	2.05
17		12.8	300		129	2.55	4.4	2.15
18		12.3	340				3.0	2.20
19		(13.1)	405					(2.18)
20		(13.3)	370			2.1		(2.30)
21		13.3	300			3.1		2.40
22		12.65	270			2.7		2.55
23		12.1	270			1.9		2.60

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Leonoldville, Belgian Congo (4.4°S, 15.2°E) **Table 40** January 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		265	11.8					2.49
01		250	10.5				1.4	2.45
02		245	8.6					2.36
03		255	7.9					2.45
04		245	6.6				2.0	2.54
05		270	7.1	---	---	1.6	2.4	2.50
06		270	9.0	250	---	110	2.9	3.0
07		280	10.1	240	---	110	3.6	3.0
08	(205)	11.0	230	---	---	110	4.0	4.2
09	---	11.4	225	---	---	110	4.1	1.98
10	485	12.6	220	---	---	110	4.4	2.02
11	460	13.2	220	---	105	4.5		2.07
12	490	12.8	220	6.5	105	4.4		2.00
13	540	12.5	220	6.1	105	4.2		1.92
14	525	13.0	230	5.9	110	4.0	4.0	1.92
15	465	13.6	240	---	110	3.6	3.8	2.03
16	430	13.6	260	---	110	3.0	3.7	2.06
17	405	13.1	290	---	130	2.1	3.0	2.03
18	380	13.2					3.0	2.00
19	350	14.0					2.1	2.16
20	295	14.8						2.32
21	250	13.5						2.30
22	250	13.0						2.36
23	260	12.6						2.36

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Huancayo, Peru (12.0°S, 75.3°W) **Table 41** January 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.0	260				3.5	2.20
01		9.2	320				4.0	2.40
02		9.3	300				4.3	2.60
03		8.6	255				4.5	2.00
04		7.95	240				4.5	3.00
05		6.5	240				4.5	3.05
06		8.5	290		115	2.02	4.0	2.75
07		11.25	255		112	(3.00)	7.0	2.55
08		13.0	235		111	(3.60)	9.0	2.39
09		13.5	225		---	(4.02)	11.0	2.25
10		13.5	220		---	(4.35)	11.5	2.05
11		12.05	215	7.1	---	---	11.5	2.05
12		11.8	210	7.0	---	---	11.2	2.10
13	(590)	11.95	200	6.7	---	---	11.0	2.08
14	---	12.55	210	6.4	---	(4.25)	9.0	2.10
15	---	12.6	210	---	106	(4.00)	9.0	2.05
16	---	12.8	235	---	---	(3.68)	9.0	2.10
17		12.5	255		109	(3.20)	0.9	2.08
18		12.45	290		---	(2.40)	6.0	2.10
19		11.5	350		---	---		2.00
20		10.6	410					1.95
21		9.3	(430)					2.00
22		9.35	405					2.05
23		8.0	300				3.5	2.10

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Rarotonga I. (21.2°S, 159.8°W) **Table 42** January 1950

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.0)	300				3.8	(2.25)
01		9.0	340				3.2	2.29
02		9.0	330				3.0	2.35
03		(0.9)	320				3.0	2.37
04		8.4	300				3.0	2.36
05		(8.4)	320		---	---	3.1	(2.38)
06		9.0	260		109	2.7	4.2	2.69
07		(10.4)	240		107	3.4	4.4	(2.64)
08	---	11.2	240	---	108	3.9	5.2	2.52
09	---	12.0	240	---	108	4.1	5.0	2.39
10	490	12.9	230	7.1	106	4.3	5.1	2.29
11	460	14.2	220	7.1	103	4.5		2.32
12	450	15.3	230	7.0	103	4.5		2.35
13	440	14.8	230	6.0	103	4.5		2.35
14	450	14.3	240	6.7	103	4.3	4.6	2.37
15	450	13.1	240	6.6	103	4.0	4.8	2.31
16	440	(12.4)	250	---	103	3.7	4.7	2.24
17	(420)	(12.8)	260		102	3.1	5.4	(2.42)
18		(12.9)	300		101	2.3	3.0	(2.36)
19		(13.2)	370		---	---	4.2	(2.42)
20		(9.7)	360		---	---	4.3	(2.34)
21		(9.9)	340		---	---	4.4	---
22		(10.5)	310		---	---	3.0	(2.39)
23		(9.6)	300		---	---	4.2	(2.35)

Time: 165.0°W.

Sweep: 1.5 Mc to 20.0 Mc in 5 minutes, manual operation.

Table 43

Lindau/Harz, Germany (51.6°N, 10.1°E)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		4.98	320				2.34
01		4.92	313				2.35
02		4.70	304				2.35
03		4.54	306				2.42
04		4.20	285				2.30
05		3.93	272				2.46
06		3.50	260				2.48
07		3.72	271				2.55
08		(7.10)	237	---	----	2.3	2.74
09		11.10	230	---	----	3.2	2.95
10		13.90	229	---	----	2.67 3.6	2.96
11		15.05	223	112	2.97	3.8	2.90
12		15.25	229	111	3.05	3.9	2.86
13		15.15	226	---	----	3.04 3.9	2.70
14		15.10	228	112	2.92	3.7	2.79
15		14.44	229	---	----	2.51 3.4	2.02
16		13.65	227	---	----	3.0	2.82
17		12.10	221	---	----	2.0	2.00
18		10.30	217			2.3	2.78
19		8.39	230				2.80
20		6.84	240				2.70
21		5.76	266				2.58
22		5.56	286				2.43
23		5.12	300				2.41

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 44

Victoria, Canada (40.4°N, 123.4°W)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		4.4	260				
01		4.3	280				
02		4.4	280				
03		4.4	290				
04		4.2	280				
05		4.1	(300)				
06		3.9	(270)				
07		4.0	270				
08		7.0	240				
09		10.0	220		---	2.0	
10		12.1	220		105	2.6	
11		13.7	220		100	3.0	
12		13.9	220		100	3.2	
13		14.0	210		100	3.2	
14		13.8	210		100	3.0	
15		13.6	230		100	2.8	
16		13.0	210		---	2.2	
17		12.2	210				
18		10.8	210				
19		9.0	200				
20		6.9	210				
21		5.5	220				
22		4.8	240				
23		4.5	260				

Time: 120.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 45

Chiclayo, Peru (6.0°S, 79.8°W)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		10.0	340				4.3 2.40
01		9.6	335				5.0 2.40
02		9.2	325				5.0 2.50
03		8.8	285				4.4 2.00
04		8.0	245				2.9 2.95
05		6.9	245				4.0 3.00
06		9.0	300	---	----	4.4	2.70
07		11.4	265	119	2.00	4.2	2.65
08		13.3	250	114	3.60	4.2	2.55
09		14.0	235	113	4.00		2.40
10		14.2	230	117	4.30		2.30
11	---	14.1	(225)	---	113	4.50	2.20
12	---	13.8	(225)	6.9	115	4.50	2.10
13	625	13.6	220	6.8	113	4.50	2.05
14	(630)	13.0	(220)	6.5	115	4.40	2.00
15	---	12.8	230	---	111	(4.10)	4.5 2.00
16		12.8	<250	---	111	(3.70)	4.5 2.05
17		12.6	270		115	3.40	5.0 2.05
18		12.2	295	123	(2.50)	4.5	2.10
19		12.2	340				3.3 2.15
20		12.1	370				(2.15)
21		11.8	350				2.10
22		>11.5	<335				3.5 2.20
23		10.8	325				4.2 2.35

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 46

Christchurch, New Zealand (43.6°S, 172.8°E)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		8.0	340				<1.7 2.30
01		7.3	340				<1.7 2.30
02		6.8	330				<1.4 2.30
03		6.3	350				<1.4 2.25
04		6.0	350		---	1.2	<1.5 2.30
05	---	5.9	300		105	2.0	2.0 2.45
06	(520)	6.3	200	---	105	2.8	3.1 2.45
07	500	6.6	250	5.1	100	3.2	4.0 2.40
08	550	7.0	250	5.7	100	3.8	4.7 2.40
09	550	7.8	240	5.8	100	4.0	4.8 2.35
10	550	8.0	240	6.0	100	4.1	4.8 2.30
11	520	8.0	(230)	6.2	100	4.2	5.2 2.30
12	550	8.1	240	6.2	100	4.2	5.0 2.30
13	550	8.1	240	6.1	100	4.2	4.4 2.30
14	550	8.1	240	6.1	100	4.2	4.4 2.30
15	540	8.0	250	6.0	100	4.1	2.30
16	540	8.0	250	5.9	100	4.0	2.30
17	460	8.3	250	5.5	105	3.7	2.35
18	(450)	8.2	260	5.2	105	3.2	3.4 2.40
19		8.2	300		110	2.8	3.2 2.45
20		8.2	330		---	---	3.2 2.40
21		8.5	340		---	---	3.0 2.30
22		8.8	340				3.4 2.30
23		8.4	350				3.1 2.25

Time: 180.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 47

Scott Base (77.8°S, 166.8°E)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00	580	5.1	280	4.0	105	2.8	2.10
01	640	5.0	280	4.0	100	2.7	2.05
02	600	5.3	280	4.0	100	2.8	2.15
03	610	5.2	270	4.1	100	3.0	2.15
04	580	5.4	260	4.2	100	3.0	2.15
05	550	5.6	260	4.3	100	3.1	2.20
06	600	5.7	250	4.6	100	3.2	2.25
07	560	6.0	250	4.6	100	3.5	2.30
08	570	5.9	250	4.8	100	3.5	2.30
09	610	6.0	240	4.8	100	3.5	2.20
10	600	6.0	240	5.0	100	3.6	2.20
11	620	6.0	230	5.1	100	3.6	2.15
12	620	6.0	230	5.1	100	3.6	2.15
13	640	6.0	230	5.0	100	3.6	2.10
14	600	6.2	250	5.0	100	3.6	2.20
15	570	6.1	240	5.0	100	3.5	2.20
16	570	6.4	240	4.8	100	3.4	2.20
17	560	6.4	250	4.8	100	3.4	2.20
18	550	6.2	250	4.6	100	3.3	2.20
19	540	6.5	250	4.3	100	3.1	2.20
20	570	5.8	250	4.3	100	3.0	2.15
21	>550	5.6	260	4.1	100	2.9	2.20
22	550	5.2	260	4.1	105	2.8	2.20
23	630	5.1	260	4.0	105	2.8	2.15

Time: 165.0°E.

Table 48

Lindau/Harz, Germany (51.6°N, 10.1°E)							
October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		6.72	314				2.37
01		6.54	312				2.35
02		6.07	312				2.36
03		5.89	303				2.36
04		5.52	287				2.42
05		5.04	268				2.49
06		5.18	262		---	----	2.58
07		7.80	244		---	----	2.84
08		11.01	232		110	2.60	3.2 2.93
09		13.45	228		106	3.05	3.9 2.92
10		13.65	222		103	3.33	4.2 2.82
11		14.65	225		105	3.50	4.3 2.75
12		14.80	222		105	3.60	4.3 2.70
13		14.29	222		104	3.58	4.1 2.64
14		14.09	228		102	3.45	3.7 2.63
15		13.84	232		103	3.21	3.7 2.62
16		13.36	240		---	2.79	3.5 2.70
17		12.91	240		---	(2.21)	3.4 2.70
18		12.00	238		---	----	3.5 2.73
19		10.39	234				2.71
20		9.02	235				2.65
21		8.29	260				2.59
22		7.56	273				2.48
23		6.99	290				2.39

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.



Table 49

Chimbote, Peru (9.1°S, 78.6°W)							
October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		8.95	255			4.5	2.55
01		9.35	260			4.4	2.60
02		0.05	250			4.3	2.75
03		8.5	240			3.4	2.62
04		7.0	240				2.90
05		6.3	240			2.9	3.00
06		8.1	230		(145)	2.02	3.5
07		11.7	255		119	3.00	2.00
08		14.05	240		119	3.70	2.65
09		14.9	230		117	4.10	2.45
10	---	15.2	230		115	4.30	2.20
11	---	14.8	220		113	4.50	2.05
12	---	(13.1)	215		115	4.50	(2.06)
13	---	(12.5)	215	---	115	4.50	2.00
14	---	(12.2)	215	---	115	4.28	7.4
15		12.0	220		111	4.00	8.1
16		11.5	240		111	3.50	7.6
17		(11.05)	270		119	3.00	6.3
18		(11.1)	315		162	2.15	4.8
19		(10.45)	415				(2.00)
20		(9.8)	455				(2.00)
21		(9.4)	(405)				(2.00)
22		9.3	350				2.2
23		9.45	290				3.2

Time: 75.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 51

Campbell I. (52.5°S, 169.2°E)							
October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(6.2)	300			2.5	(2.50)
01		(5.8)	320			1.9	2.50
02		(5.0)	300			1.7	2.45
03		(5.0)	<320			1.6	(2.45)
04		(4.9)	300		125	1.7	(2.50)
05		5.8	270		105	2.2	2.70
06		6.6	250		100	2.8	2.75
07	---	7.4	230	---	105	3.3	2.70
08	---	8.0	220	---	100	3.5	2.70
09	(500)	8.2	220	6.1	100	3.8	2.55
10	(440)	8.4	220	6.7	105	3.9	2.60
11	(460)	8.4	220	6.6	105	3.9	2.50
12	450	9.0	220	(6.3)	110	3.9	2.50
13	440	9.2	220	6.6	105	4.0	2.50
14	440	9.3	220	(6.3)	105	3.9	2.45
15	(420)	8.9	220	5.8	105	3.6	2.50
16	---	8.9	240	---	110	3.2	(2.60)
17	---	(8.3)	250	---	110	2.0	(2.65)
18	---	(8.1)	270	---	120	2.2	---
19	---	(6.8)	270	---	115	1.6	<1.8
20	---	(6.6)	260	---	---	---	---
21	---	7.8	270	---	---	---	1.0
22	---	7.0	290	---	---	---	2.2
23	---	(6.7)	310	---	---	---	3.2

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 53

Scott Base (77.8°S, 166.0°E)							
October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	---	5.2	320	---	---	1.4	<2.9
01	---	4.9	340	---	---	1.6	2.70
02	(420)	5.0	330	---	160	1.7	2.0
03	---	4.9	320	---	<140	1.9	2.80
04	---	5.6	300	3.8	(120)	2.0	2.2
05	(450)	6.3	290	---	110	2.2	3.00
06	---	6.5	270	4.0	115	2.6	3.00
07	(500)	7.1	260	4.4	110	2.7	2.90
08	(450)	7.4	250	4.7	110	2.9	2.90
09	430	7.6	250	4.8	110	3.0	2.70
10	500	7.4	250	5.0	105	3.0	2.80
11	500	7.9	250	5.2	105	3.1	2.70
12	470	7.7	250	5.0	105	3.1	2.70
13	460	8.1	250	5.0	105	3.0	2.70
14	450	8.1	250	4.9	105	3.0	2.60
15	460	8.0	250	4.8	110	2.9	2.60
16	440	8.0	260	4.6	110	2.8	2.60
17	430	8.4	270	4.4	115	2.7	2.70
18	(450)	8.3	280	---	120	2.5	2.60
19	---	7.8	290	---	<130	2.3	2.70
20	---	7.6	300	---	140	2.0	2.70
21	---	6.8	300	---	150	1.8	2.60
22	---	6.0	320	---	150	1.7	2.60
23	---	5.5	340	---	---	1.6	2.65

Time: 165.0°E.

Table 50

Christchurch, New Zealand (43.6°S, 172.8°E)							
October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		8.1	300				<1.6
01		7.8	300				<1.4
02		7.2	300				<1.1
03		6.9	300				2.35
04		6.4	310				2.35
05		6.3	310		<200	1.4	2.40
06		6.8	300		115	2.0	2.60
07		8.3	250		105	2.9	2.75
08		9.2	250		100	3.3	2.80
09		10.2	250	---	100	3.7	2.70
10	---	10.4	240	6.6	100	4.0	2.65
11	---	10.6	240	6.6	100	4.0	2.55
12	(440)	10.7	240	6.8	100	4.0	2.55
13	(450)	10.5	240	7.0	100	4.1	2.50
14	440	10.4	240	7.0	100	4.0	2.45
15	---	10.0	250	6.8	100	3.9	2.50
16	---	9.9	250	---	100	3.6	2.50
17	---	9.9	250	---	105	3.1	2.55
18	---	9.9	270	---	120	2.6	2.55
19	---	10.0	290	---	(1.7)	<1.0	2.55
20	---	9.5	280	---	---	<1.5	2.50
21	---	9.3	300	---	---	<1.6	2.50
22	---	8.9	300	---	---	<1.7	2.45
23	---	8.4	300	---	---	<1.6	2.40

Time: 180.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 52

Cape Hallett (72.3°S, 170.3°E)							
October 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.6)	355	---	(1.6)		2.30
01		(4.3)	370	---	(1.6)		(2.35)
02		(3.7)	350	---	(1.6)		(2.30)
03		4.4	315	---	125	(1.6)	(2.55)
04		(4.8)	305	---	109	(1.8)	2.50
05	---	(5.7)	285	(4.0)	109	(2.4)	(2.50)
06	(505)	6.7	250	---	109	(2.7)	2.60
07	(455)	(7.4)	250	(4.6)	107	(3.0)	2.45
08	(465)	8.0	250	(4.8)	105	(3.1)	2.40
09	420	(8.3)	240	(4.8)	105	(3.2)	2.40
10	450	7.6	235	5.1	103	(3.3)	2.35
11	505	(7.6)	230	5.0	101	(3.4)	2.35
12	510	(7.8)	225	5.0	102	(3.4)	2.35
13	480	8.0	230	5.2	103	(3.3)	2.35
14	480	7.9	235	5.2	105	(3.2)	2.35
15	510	7.6	245	4.8	107	3.0	2.30
16	455	8.0	250	4.5	109	(2.9)	2.30
17	(445)	7.0	270	4.4	109	2.7	2.35
18	---	8.3	280	(3.6)	109	2.4	2.30
19	---	8.0	300	---	109	2.0	2.35
20	---	7.7	310	---	123	1.6	2.35
21	---	(6.9)	300	---	139	1.6	2.35
22	---	(5.9)	310	---	---	1.6	2.35
23	---	(5.0)	330	---	---	1.5	2.25

Time: 165.0°E.

Table 54

Lindau/Harz, Germany (51.6°N, 10.1°E)							
September 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.93	292				2.54
01		6.70	302				2.55
02		6.42	284				2.56
03		5.79	300				2.53
04	---	5.18	291				2.55
05	---	4.64	294	---	---	2.2	2.58
06	---	5.62	273	---	---	1.98	2.7
07	---	6.72	250	---	112	2.56	3.5
08	(572)	8.15	240	4.05	110	3.05	3.8
09	G	9.18	234	4.54	109	3.37	4.0
10	G	10.00	231	4.78	106	3.54	4.4
11	G	10.40	231	4.85	106	3.69	4.8
12	(735)	10.38	232	4.80	106	3.80	4.6
13	(678)	10.21	236	5.15	105	3.78	4.4
14	(658)	10.08	235	5.12	107	3.68	4.1
15	(484)	10.18	241	5.30	105	3.52	3.8
16	---	10.12	241	---	106	3.29	3.8
17	---	10.12	250	---	109	2.89	3.8
18	---	9.84	252	---	112	---	3.3
19	---	9.60	248	---	---	---	3.0
20	---	8.73	250	---	---	---	3.2
21	---	8.16	256	---	---	---	2.6
22	---	7.45	268	---	---	---	2.60
23	---	7.04	280	---	---	---	2.57

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 55

Slough, England (51.5°N, 0.6°W) September 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.0	340				2.0
01		(6.2)	315				2.4
02		5.4	320				1.9
03		(4.8)	335				2.4
04		(4.3)	340				<1.4
05		4.2	320		(140)	<1.60	2.55
06		5.3	270	---	145	2.10	3.0
07		7.0	250	3.9	125	2.80	3.2
08		8.0	250	4.2	120	3.20	3.4
09	800	8.6	245	4.8	120	3.50	3.7
10	570	9.0	240	5.1	120	3.70	4.0
11	745	>9.4	230	5.1	115	3.75	4.1
12	530	9.9	240	5.4	115	3.80	4.0
13	475	10.6	240	5.4	115	3.80	4.2
14	400	10.1	245	5.4	115	3.70	2.55
15	520	10.0	250	5.0	115	3.50	2.60
16	440	9.5	250	4.4	120	3.20	3.4
17	(440)	9.3	260	---	120	2.70	3.5
18		8.5	260	---	140	<2.10	3.6
19		7.2	260			1.60	3.0
20		8.4	260			---	2.9
21		7.6	260			---	2.2
22		6.8	285			---	1.9
23		6.8	300			---	1.8

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 56

Budapest, Hungary (47.4°N, 19.2°E) September 1957							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	foEs (M3000)F2
00	320	6.2					2.84
01	330	6.0					2.79
02	320	5.8					2.84
03	310	5.4					2.90
04	340	5.0					2.74
05	310	4.7					2.90
06	290	6.4			130	2.2	3.06
07	260	7.4	---	---	130	2.7	3.19
08	270	9.5	260	4.8	125	3.1	3.16
09	285	9.6	245	5.2	120	3.4	3.06
10	285	9.6	260	5.4	120	3.5	3.04
11	330	10.1	250	5.9	120	3.8	2.79
12	330	10.4	250	5.9	120	3.8	2.79
13	370	10.0	260	6.1	120	3.7	2.63
14	370	9.8	255	6.0	125	3.6	2.60
15	320	9.8	255	5.5	130	3.3	2.86
16	280	10.1	265	5.1	130	3.0	3.06
17	270	9.8	---	---	135	2.7	3.13
18	270	9.2			---	---	3.16
19	270	8.6			---	---	3.13
20	275	7.6					3.10
21	295	7.0					2.97
22	300	6.7					2.95
23	325	6.0					2.84

Time: Local.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 57

Bogota, Colombia (4.5°N, 74.2°W) September 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		13.0	230				3.05
01		>10.05	225				3.10
02		8.7	<240				2.98
03		8.15	230				3.00
04		7.3	<240				2.08
05		4.5	<270		---	---	1.9
06		6.8	270		129	---	3.0
07		10.3	245		111	3.00	3.4
08		11.9	235		109	3.62	2.80
09		13.15	230		109	4.00	2.70
10		13.65	<230		111	4.20	2.60
11		14.15	230	---	111	(4.35)	2.55
12	420	14.3	230	---	111	(4.42)	2.55
13	415	14.8	(225)	---	111	4.35	2.55
14	405	14.55	(220)	---	111	4.25	2.55
15	415	14.3	230	---	111	3.95	4.0
16		14.1	240		109	3.45	3.8
17		14.75	260		<115	2.70	3.8
18		14.75	280				3.4
19		16.5	320				2.9
20		(18.0)	230				(2.65)
21		(18.0)	245				2.70
22		(17.3)	240				(2.80)
23		15.3	235				3.00

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 58

Cape Hallett (72.3°S, 170.3°E) September 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.6)	310				<1.6
01		(4.4)	300		---	---	<1.3
02		(4.2)	(275)		---	---	<1.3
03		(4.4)	---		---	---	<2.5
04		(3.6)	(310)		---	---	<2.4
05		(3.6)	(300)		---	---	<2.0
06		(5.8)	270		---	---	<2.5
07		(6.7)	260		---	---	<2.9
08		(8.0)	255		---	---	<2.5
09		(7.2)	255		---	---	<3.0
10		(7.2)	(245)		---	111	(2.9)
11		(8.7)	245		---	110	(2.9)
12	(255)	(8.6)	235		---	109	3.0
13		(8.1)	235		---	109	(2.8)
14		(8.8)	250		---	111	(2.7)
15		(0.8)	250		---	(2.5)	<2.8
16		(8.9)	260		---	2.2	<2.8
17		9.0	260		---	1.9	<2.4
18		(8.1)	260		---	1.4	<2.4
19		(8.8)	255				<2.2
20		(7.4)	250				<1.8
21		(6.7)	260				<1.4
22		(5.6)	255				<1.4
23		(4.8)	280				<1.4

Time: 165.0°E.

Table 59

Lindau/Harz, Germany (51.6°N, 10.1°E) August 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		6.45	299				2.6
01		6.30	297				2.6
02		5.72	300				2.2
03		5.50	297				2.6
04		5.12	290				2.5
05	---	5.16	286	---	---	---	2.9
06	---	6.03	252	---	111	(2.32)	3.4
07	---	7.04	232	---	105	2.78	4.0
08	(400)	7.88	230	5.00	103	3.18	4.8
09	(350)	8.01	224	5.08	103	3.42	5.0
10	(306)	8.05	218	5.16	102	3.62	5.4
11	410	8.06	219	5.62	101	3.80	5.0
12	370	8.63	222	5.70	102	3.85	5.1
13	394	8.72	216	5.68	102	3.83	4.8
14	380	0.60	221	5.59	102	3.78	4.4
15	359	8.40	220	5.45	105	3.66	4.4
16	349	8.14	227	5.08	103	3.46	4.3
17	---	8.15	232	---	106	3.14	4.2
18		8.34	248		106	2.66	4.0
19		8.33	260		105	---	---
20		8.02	254				3.2
21		7.88	252				2.75
22		7.40	264				2.65
23		6.71	280				2.56

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 60

Juliusruh/Rügen, Germany (54.6°N, 13.4°E) May 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		7.1				E	2.4
01		7.0				E	2.5
02		6.6				E	2.6
03		6.2				E	2.2
04		6.2			---	1.40	2.1
05		6.7			---	2.15	2.6
06		7.1			4.4	2.60	3.4
07		7.0			5.0	3.00	4.0
08		7.5			5.3	3.30	4.0
09		7.7			5.3	3.50	5.2
10		7.9			5.6	3.60	4.7
11		7.8			5.7	3.70	4.7
12		0.4			5.7	3.65	(5.4)
13		8.3			5.7	3.70	4.5
14		8.4			5.7	3.65	4.8
15		0.4			5.5	3.60	4.0
16		8.2			5.6	3.50	(3.9)
17		0.0			5.3	3.05	3.6
18		0.1			4.3	2.65	3.6
19		8.3			---	2.20	3.3
20		8.0				2.00	2.5
21		7.7				---	---
22		7.5				---	---
23		7.4				---	---

Time: 15.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 20 seconds.

Table 61

Murmansk, U.S.S.R. (69.0°N, 33.1°E) April 1957							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	420	6.0					2.5
01	420	6.3					2.4
02	420	5.6					2.4
03	350	5.8					2.6
04	320	6.0					2.6
05	300	6.0					2.7
06	320	6.4	260	4.0	120	2.5	2.7
07	360	6.6	240	4.6	120	2.6	2.7
08	360	6.9	250	4.8	120	2.8	2.6
09	410	7.3	240	5.0	120	3.2	2.6
10	370	8.0	220	5.0	110	3.2	2.6
11	370	8.2	230	5.2	120	3.2	2.5
12	360	8.5	220	5.1	110	3.2	2.6
13	380	8.3	230	5.2	120	3.3	2.6
14	360	8.3	240	5.2	120	3.2	2.6
15	350	8.0	240	(5.0)	120	3.1	2.6
16	340	7.1	260	(4.9)	110	2.6	2.7
17	330	7.3	270	(4.6)	110	2.7	2.8
18	300	6.6	260	4.2			2.7
19	290	6.9					2.7
20	330	6.3					2.7
21	380	6.2					2.6
22	370	5.7					2.5
23	440	5.9					2.6

Time: 30.0°E.  
Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 63

Narsarsuaq, Greenland (61.2°N, 45.4°W) April 1957							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00		(5.4)	325				2.4
01		(4.0)	330				2.8
02		(4.4)	365				2.6
03		(4.4)	400				3.0
04		(4.3)	345				3.3 (2.60)
05		4.6	340				3.3
06	---	5.6	280	---	---	---	3.0
07	---	6.3	270	---	122	3.10	2.90
08	(540)	6.4	250	4.6	116	3.25	2.70
09	520	6.6	<250	(4.9)	117	3.40	2.65
10	500	6.9	240	5.0	116	3.50	2.55
11	450	7.8	240	5.2	113	3.55	2.55
12	450	8.0	240	5.2	112	3.60	2.55
13	450	8.0	240	5.2	111	3.60	2.55
14	430	7.4	240	5.1	109	3.50	2.60
15	420	(7.2)	250	4.9	113	3.30	2.70
16	410	7.0	255	5.0	113	3.15	2.75
17	---	6.8	280	---	115	3.00	2.70
18	---	(6.4)	305	---	121	2.70	2.70
19	---	(5.9)	320	---			3.4 (2.70)
20	---	(5.8)	305	---			---
21	---	(6.0)	320	---			1.6
22	---	(5.5)	330	---			2.6
23	---	(5.6)	320	---			---

Time: 45.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 65

Rostov-on-Don, U.S.S.R. (47.2°N, 39.7°E) April 1957							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	340	7.2					2.3
01	350	7.2					2.4
02	340	7.0					2.4
03	340	6.4					2.3
04	330	6.2					2.3
05	320	6.4					2.4
06	280	7.3			130	2.1	2.8
07	260	7.0			130	2.7	2.8
08	250	9.2	250	5.0	120	3.1	2.8
09	250	9.2	240	5.0	120	3.5	2.8
10	260	9.4	220	5.0	120	3.7	---
11	260	9.4	220	5.1	120	3.8	---
12	270	9.4	240	5.5	120	3.8	---
13	250	9.4	230	5.6	120	3.8	---
14	240	9.8	240	5.8	120	3.8	---
15	240	9.6	240	5.2	120	3.6	---
16	250	9.4	240	5.2	120	3.5	---
17	250	9.6	250	5.0	120	3.1	---
18	260	9.2			120	2.5	---
19	260	9.2			---	2.2	---
20	260	9.0					2.0
21	260	8.4					2.7
22	300	7.3					2.6
23	320	7.4					2.4

Time: 45.0°E.  
Sweep: 1.6 Mc to 10.0 Mc in 15 minutes, manual operation.

Table 62

Yakutsk, U.S.S.R. (62.0°N, 129.7°E) April 1957							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	330	(7.0)					2.6
01	330	(6.6)					2.5
02	340	(5.6)					2.5
03	350	(5.1)					2.5
04	330	(5.1)					2.6
05	290	(5.4)					2.6
06	260	5.8	270	---			2.7
07	260	(7.0)	260	4.6	110	2.9	2.8
08	270	(7.4)	230	4.8	80	3.0	2.8
09	230	0.0	220	4.8	90	3.2	2.9
10	250	8.6	210	5.4	00	3.3	3.0
11	280	9.0	210		00	3.4	2.8
12	250	9.5	200	---	80	3.4	2.8
13	290	9.8	210		00	3.4	2.8
14	280	10.0	210		80	3.4	2.8
15	270	10.2	220		00	3.4	2.7
16	230	10.0	230		80	3.2	2.7
17	240	10.2	240	---	100	3.0	2.8
18	250	10.4	(230)	---			2.8
19	250	10.2					2.8
20	250	10.2					2.7
21	260	9.2					2.7
22	280	8.2					2.7
23	310	7.6					2.6

Time: 135.0°E.  
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 64

Chita, U.S.S.R. (52.0°N, 113.3°E) April 1957							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	7.9					2.5
01	315	7.5					2.5
02	320	7.1					2.4
03	320	6.5					2.4
04	300	6.3					2.5
05	300	6.5					2.6
06	260	7.4			130	(2.3)	2.7
07	260	8.3			120	(2.7)	2.8
08	250	9.0	250	4.6	120	(3.1)	2.9
09	260	9.5	240	4.8	120	(3.4)	2.9
10	260	10.0	240	5.0	120	(3.7)	2.9
11	260	10.6	230	5.0	120	(3.8)	2.8
12	260	10.7	230	5.0	120	(3.8)	2.7
13	280	10.8	230	5.4	120	(3.9)	2.8
14	260	10.8	230	5.0	120	(3.8)	2.9
15	260	10.5	240	5.0	120	(3.7)	2.8
16	260	10.6	240	4.8	120	(3.5)	2.8
17	260	10.4	240	4.7	120	(3.1)	2.8
18	260	10.4			120	(2.7)	2.8
19	260	9.6			---	(2.2)	2.8
20	260	9.3					2.8
21	260	9.0					2.7
22	280	8.7					2.6
23	290	8.2					2.5

Time: 120.0°E.  
Sweep: 1.0 Mc to 18.0 Mc in 5 minutes, semi-automatic operation.

Table 66

Yuzhno-Sakhalinsk, U.S.S.R. (47.0°N, 143.0°E) April 1957							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	320	7.4					2.5
01	320	7.6					2.4
02	330	7.4					2.5
03	320	7.2					2.5
04	320	6.7					2.4
05	320	6.8					2.4
06	260	7.8				2.1	2.7
07	250	7.7					3.0
08	250	9.0	240	4.6	120	2.8	3.0
09	250	9.8	240	5.2	120	3.4	3.2
10	250	11.0	230	5.0	110	3.6	2.9
11	250	11.1	230	5.4	110	3.7	2.0
12	250	10.2	230	5.6	110	3.5	3.0
13	250	9.4	240	6.0			3.2
14	250	10.0	240	6.4			3.3
15	250	9.4	240	6.2			3.1
16	250	9.7	250	6.8			3.0
17	250	9.2	250	6.6			3.2
18	250	9.4					3.2
19	260	9.0					3.4
20	260	8.6					3.4
21	270	7.8					3.1
22	280	7.6					2.9
23	300	7.5					2.8

Time: 140.0°E.  
Sweep: 1.0 Mc to 18.0 Mc in 10 minutes, semi-automatic operation.

Table 67

Ashkhabad, U.S.S.R. (37.9°N, 58.3°E)								
April 1957								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	8.0						2.5
01	300	7.7						2.6
02	300	7.6						2.6
03	300	7.2						2.5
04	300	7.1						2.5
05	300	7.0			---	1.2		2.5
06	260	8.3			140	2.1		2.8
07	250	9.7			110	2.8		2.9
08	250	11.2	240	5.6	110	3.2		2.9
09	250	12.2	230	5.4	100	3.6		2.8
10	280	12.6	230	6.0	110	3.8		2.7
11	280	13.0	230	6.0	100	3.9		2.7
12	290	13.2	230	6.4	110	4.0		2.6
13	330	13.2	230	6.7	110	4.0		2.6
14	320	13.0	240	6.4	100	3.9		2.6
15	320	12.2	240	6.5	100	3.7		2.6
16	300	12.0	240	6.2	100	3.4		2.6
17	250	11.4	250	5.7	110	3.1		2.7
18	260	11.0			120	2.6		2.8
19	250	10.2						2.9
20	250	9.2						2.7
21	270	8.4						2.5
22	300	8.4						2.6
23	300	8.2						2.5

Time: 60.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 15 minutes, manual operation.

Table 69

Murmansk, U.S.S.R. (69.0°N, 33.1°E)								
February 1957								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	390	5.2						2.6
01	350	4.9						2.6
02	360	4.6						2.6
03	380	5.9						2.7
04	340	5.4						2.6
05	310	5.5						2.7
06	300	5.6						2.8
07	290	5.3						2.8
08	270	6.4						2.9
09	260	8.0						3.0
10	260	9.7						3.0
11	250	11.0						2.9
12	250	11.9						2.9
13	250	12.0						3.0
14	250	11.0						3.0
15	250	10.2						3.0
16	250	9.6						3.0
17	240	8.2						2.9
18	260	6.0						2.8
19	300	5.0						2.8
20	320	5.0						2.7
21	350	5.3						2.6
22	380	5.0						2.6
23	360	5.3						2.6

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 71

Christchurch, New Zealand (43.6°S, 172.8°E)								
November 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	8.1					<2.0	2.4
01	310	7.5					<2.5	2.35
02	300	7.0					<2.5	2.4
03	320	6.6					<2.4	2.3
04	320	6.2					<1.5	2.4
05	300	6.5					(1.9)	2.5
06	260	6.9					2.8	2.6
07	250	7.2	250	---			3.2	3.8
08	250	0.1	250	5.7	100	3.5		2.6
09	400	8.8	240	5.9	100	3.9	4.2	2.6
10	440	9.0	250	6.4	100	4.0	4.5	2.5
11	450	9.1	250	6.1	---		(4.2)	4.4
12	420	9.5	240	6.5	---		4.1	4.6
13	420	9.4	240	6.3	100	4.0		2.5
14	450	9.6	250	6.1	100	4.1		2.4
15	440	9.5	240	6.1	100	3.9		2.5
16	400	9.4	250	5.6	105	3.5		2.5
17	250	9.2	250	---	110	3.2		2.5
18	270	9.0	---	---	110	2.8	3.5	2.5
19	300	0.9			---	2.1	3.6	2.5
20	300	9.0			---	---	3.5	2.5
21	300	9.0			---	---	4.1	2.4
22	310	8.5			---	---	<2.3	2.4
23	320	0.3					3.4	2.4

Time: 172.5°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 68

Murmansk, U.S.S.R. (69.0°N, 33.1°E)								
March 1957								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(370)	5.9						2.5
01	(370)	6.0						2.6
02	360	6.1						2.6
03	(340)	5.4						2.5
04	(320)	(6.0)						2.6
05	290	6.0						2.7
06	280	6.2						2.9
07	270	6.8						2.9
08	260	7.4	240	4.2	120	2.5		2.8
09	260	8.1	240	4.5	120	2.8		2.8
10	260	9.0	230	4.7	120	2.8		2.8
11	270	9.5	230	4.9	110	2.9		2.8
12	270	9.9	230	4.5	120	3.0		2.7
13	260	10.0	230	4.8	120	3.0		2.0
14	260	10.0	230	4.4	120	2.9		2.8
15	260	9.3	230	4.2	110	2.7		2.9
16	250	8.6	240	4.2	120	2.5		2.9
17	260	8.0						2.9
18	270	6.6						2.8
19	310	6.0						2.8
20	(330)	6.2						2.8
21	(350)	6.0						2.7
22	(380)	(6.0)						2.5
23	(410)	(5.4)						2.5

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 70

Murmansk, U.S.S.R. (69.0°N, 33.1°E)								
January 1957								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	380	4.2						2.6
01	(390)	(4.2)						(2.6)
02	340	3.6						2.6
03	(360)	(5.2)						(2.6)
04	340	6.0						2.6
05	320	5.0						2.7
06	290	4.9						2.7
07	280	4.6						2.0
08	280	4.9						2.7
09	260	5.8						2.8
10	260	8.2						2.9
11	250	10.4						3.0
12	250	11.6						3.0
13	240	11.4						3.0
14	270	10.6						3.0
15	250	9.2						2.9
16	240	8.0						3.0
17	250	5.6						3.0
18	280	4.8						2.9
19	300	4.0						2.8
20	340	3.6						2.7
21	340	3.5						2.8
22	380	3.6						2.6
23	370	3.6						(2.6)

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 30 seconds.

Table 72

Poitiers, France (46.6°N, 0.3°E)								
August 1956								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.6					2.4	----
01	300	6.4					2.4	----
02	305	6.2					2.6	(2.30)
03	295	6.0					2.6	2.60
04	285	5.7					2.5	2.60
05	275	5.9					E	2.85
06	260	6.6	250	3.6	110	2.4	3.2	2.95
07	275	7.2	240	4.6	105	2.9	3.8	(3.00)
08	280	7.4	225	5.0	100	3.3	4.2	(2.90)
09	305	8.0	220	5.2	100	3.6	4.6	2.90
10	330	8.2	205	5.6	100	3.7	4.5	2.90
11	335	8.0	210	5.6	100	3.8	4.7	2.85
12	360	8.0	210	5.7	100	3.8	4.7	2.80
13	355	8.0	230	5.7	100	3.8	4.6	(2.70)
14	350	8.3	225	5.7	100	3.8	4.3	2.75
15	335	8.0	225	5.5	100	3.6	4.0	2.80
16	320	7.6	250	5.2	105	3.4	4.1	(2.75)
17	300	8.1	240	4.7	105	3.0	3.7	----
18	260	(7.6)	255	4.0	110	2.4	3.5	----
19	250	(8.1)	---	---	---	---	E	3.7
20	240	(7.6)	---	---	---	---	E	4.2
21	250	7.0					4.6	----
22	<270	6.9					3.2	----
23	280	7.0					2.6	----

Time: 0.0°E.

Sweep: 1.6 Mc to 16.8 Mc in 1 minute.



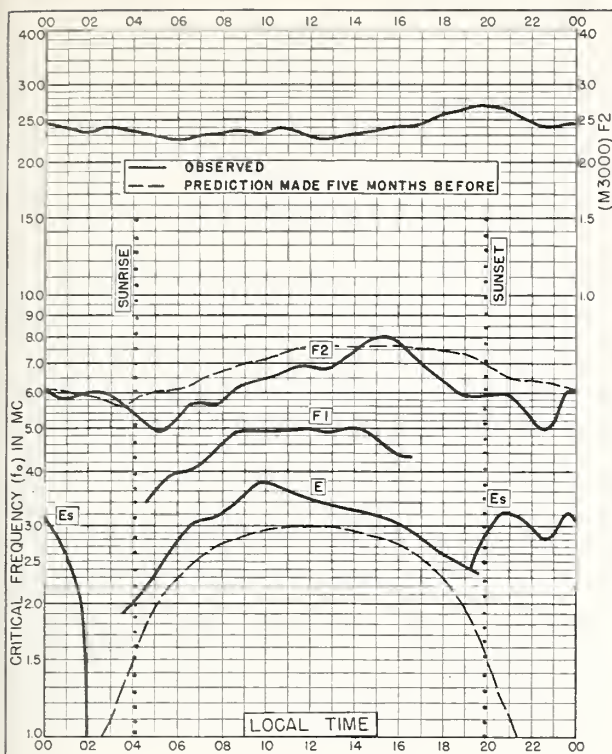


Fig. 1. POINT BARROW, ALASKA  
71.3°N, 156.8°W

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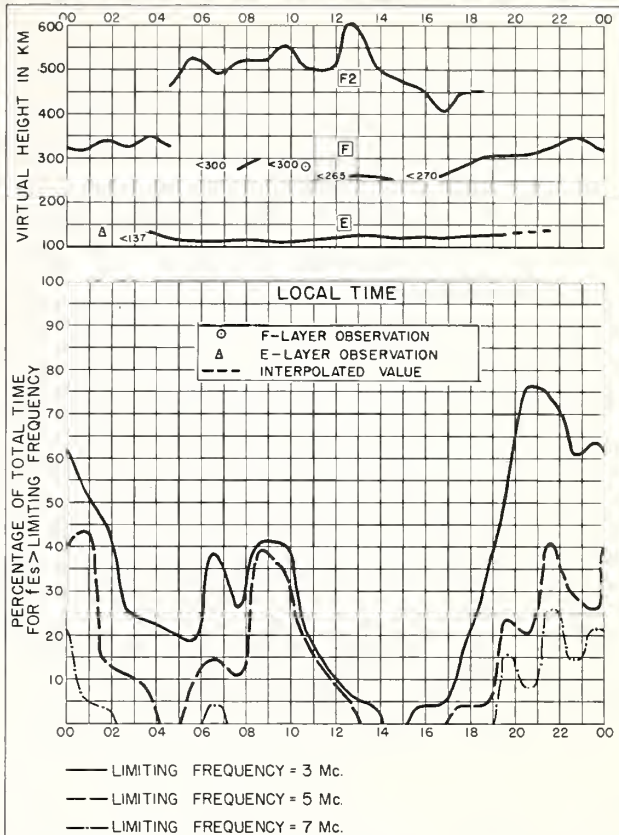


Fig. 2. POINT BARROW, ALASKA

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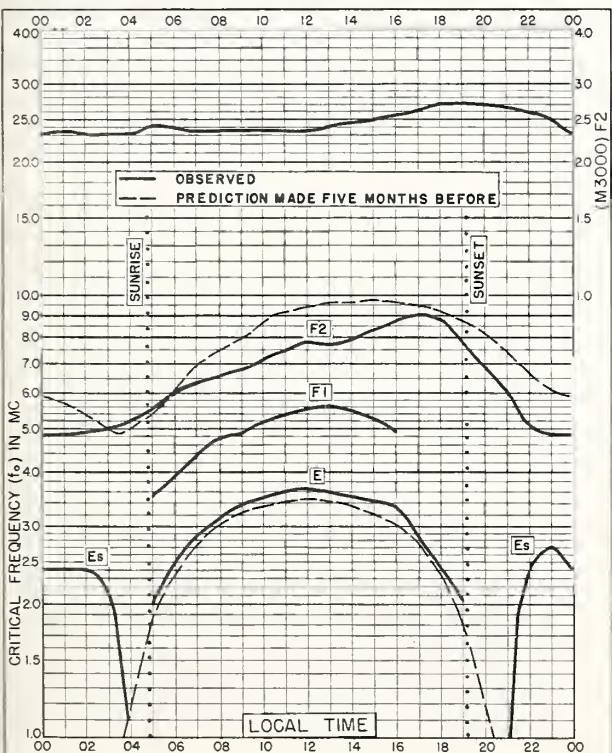


Fig. 3. ANCHORAGE, ALASKA  
61.2°N, 149.9°W

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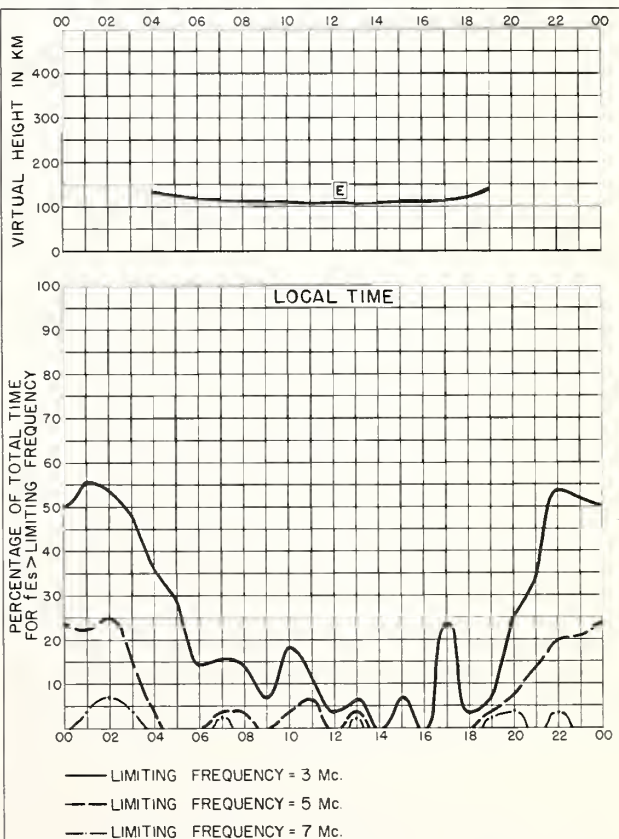


Fig. 4. ANCHORAGE, ALASKA

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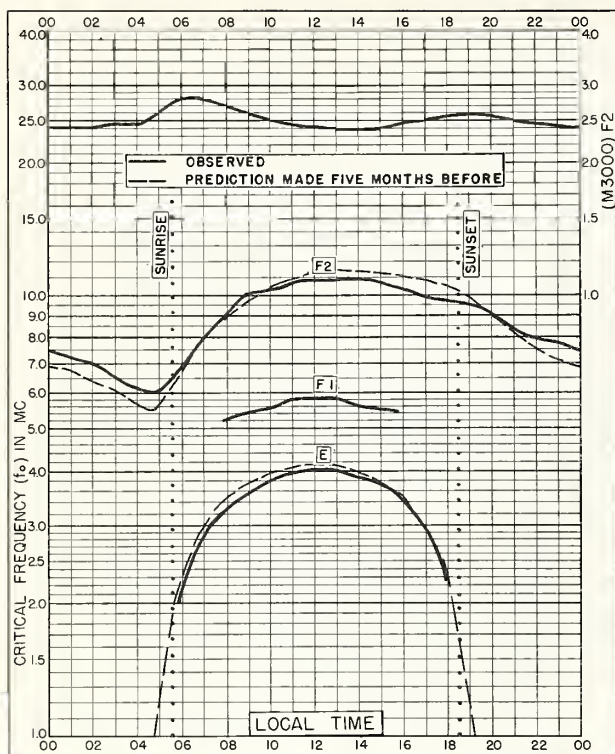


Fig. 5. WASHINGTON, D. C.  
38.7°N, 77.1°W

APRIL 1958

NBS 503

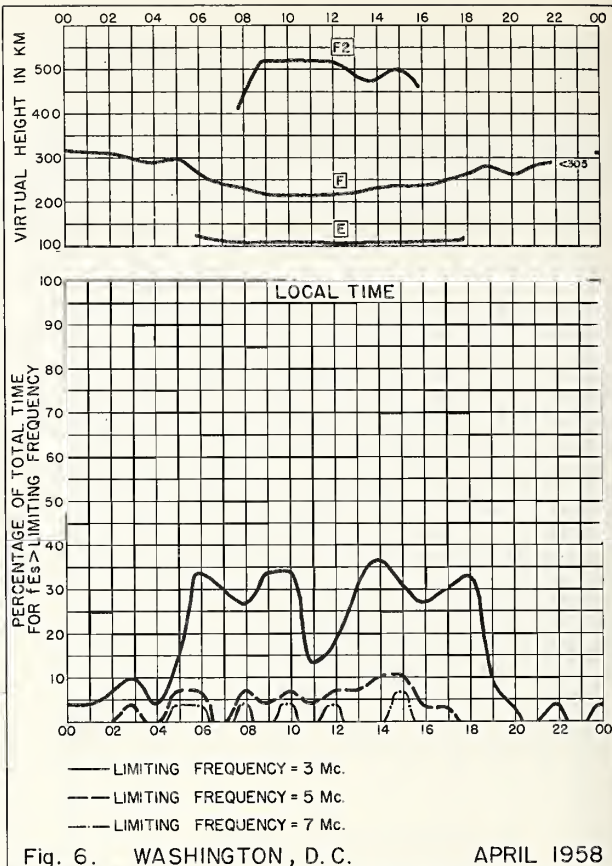


Fig. 6. WASHINGTON, D. C.

APRIL 1958

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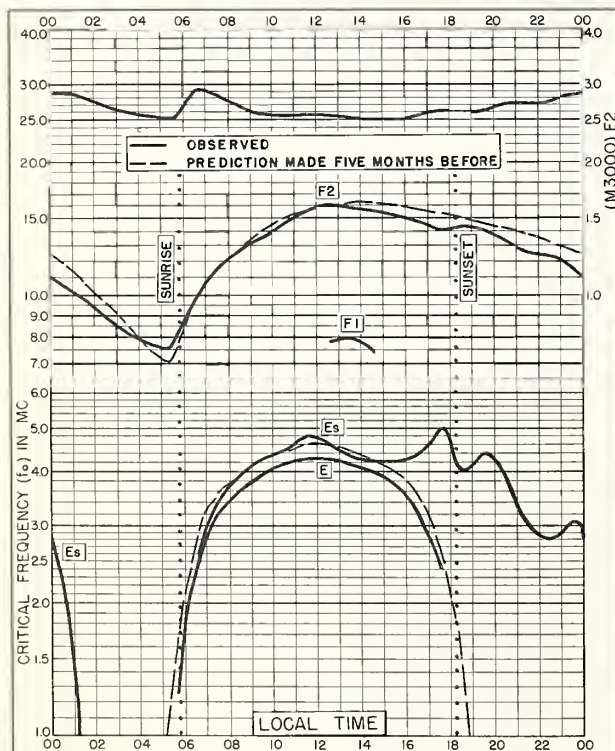


Fig. 7. MAUI, HAWAII  
20.8°N, 156.5°W

APRIL 1958

NBS 503

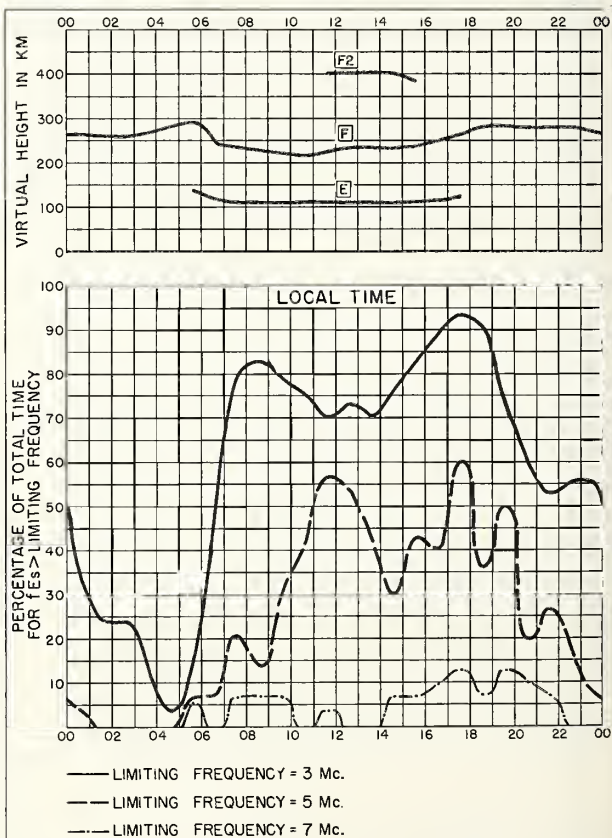


Fig. 8. MAUI, HAWAII

APRIL 1958

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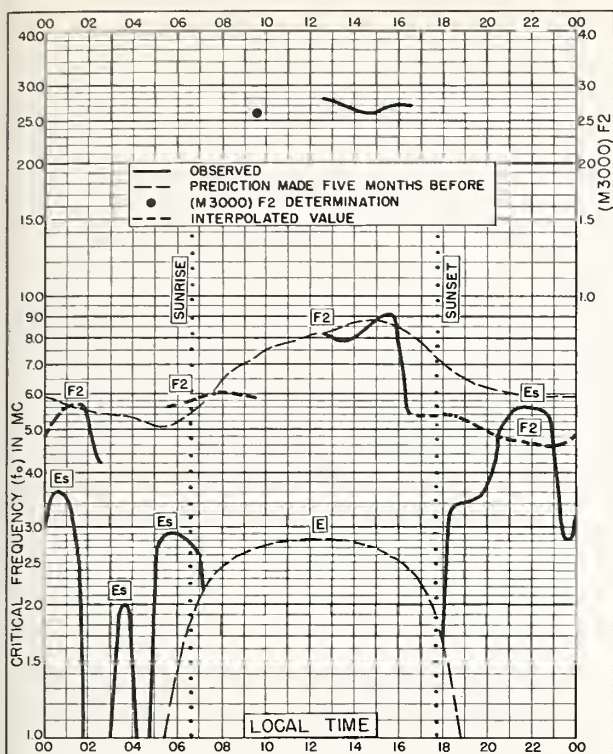


Fig. 9. POINT BARROW, ALASKA  
71.3°N, 156.8°W

MARCH 1958

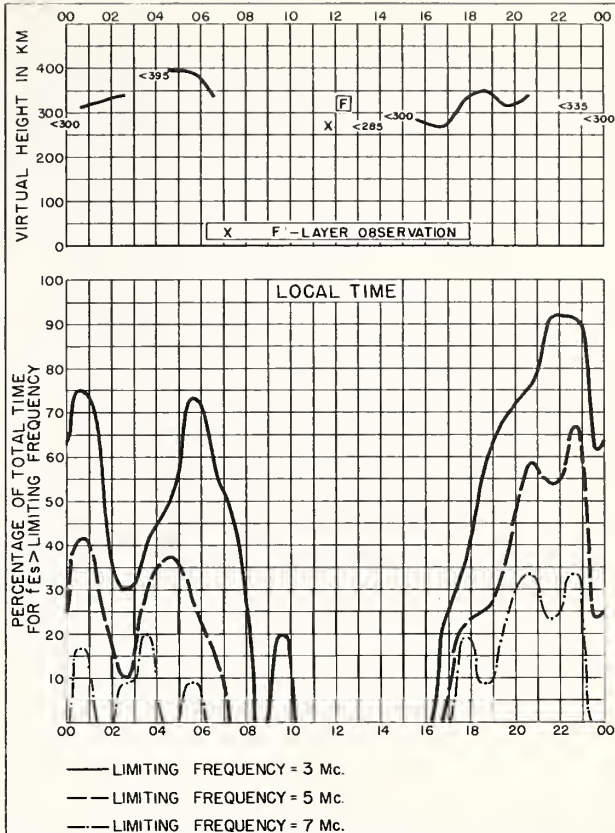


Fig. 10. POINT BARROW, ALASKA MARCH 1958

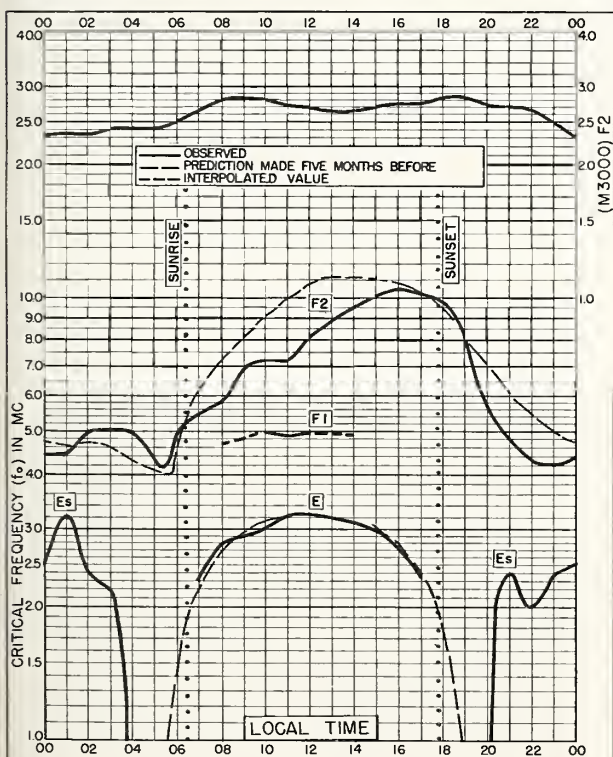


Fig. 11. ANCHORAGE, ALASKA  
61.2°N, 149.9°W

MARCH 1958

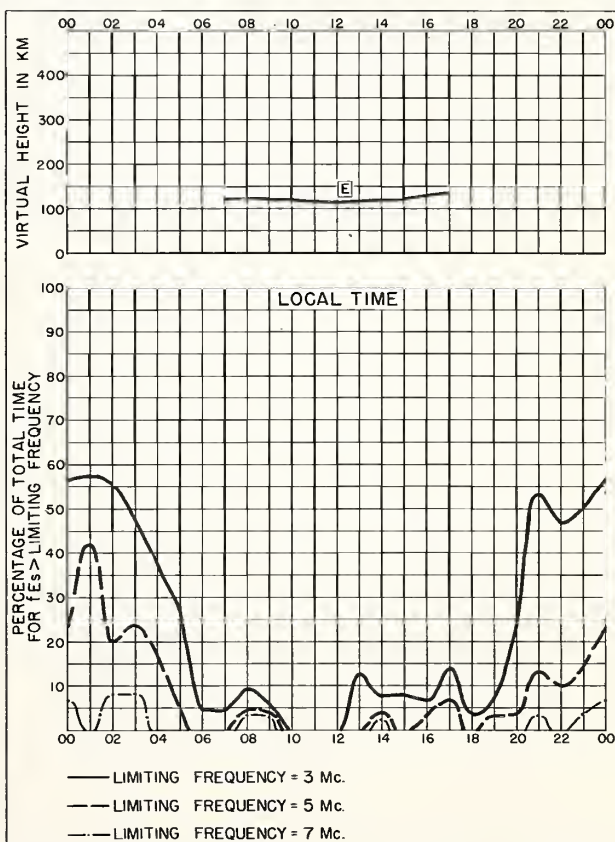


Fig. 12. ANCHORAGE, ALASKA MARCH 1958

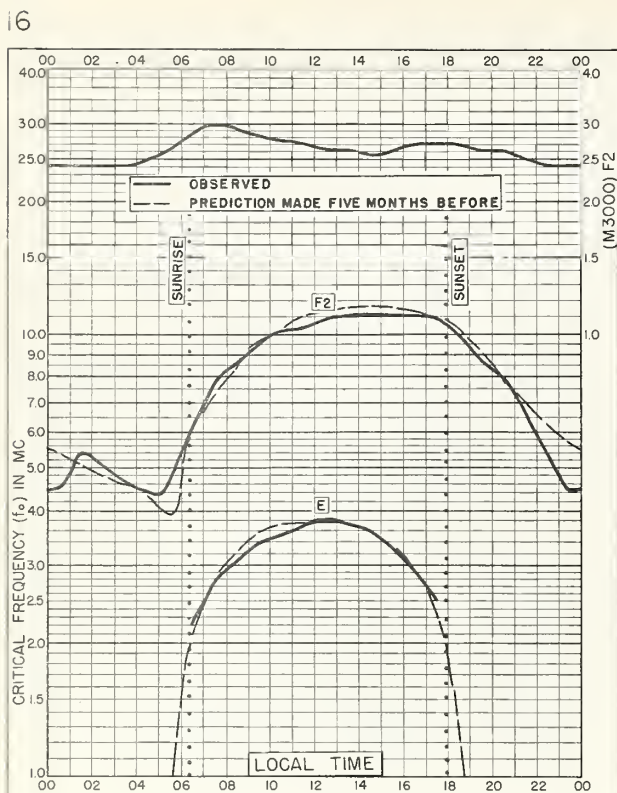


Fig. 13. ST. JOHN'S, NEWFOUNDLAND  
47.6°N, 52.7°W  
MARCH 1958

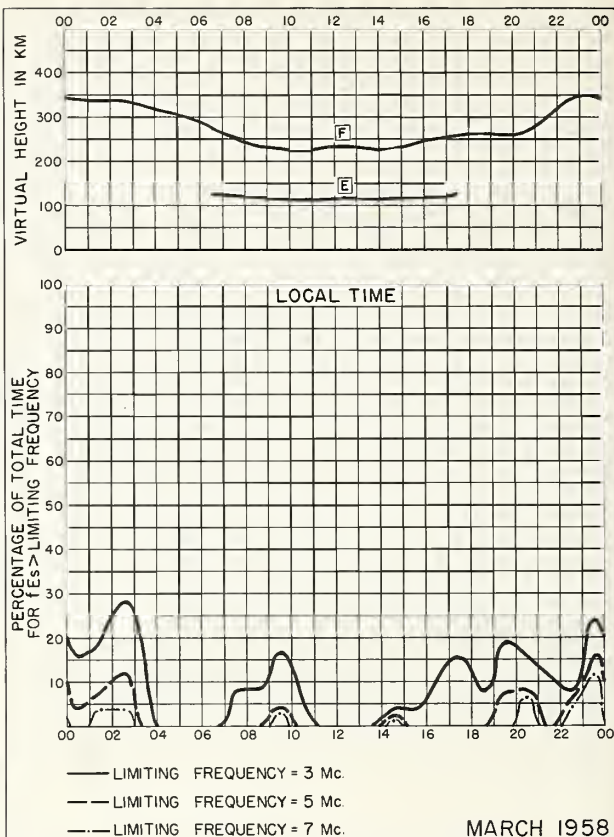


Fig. 14. ST. JOHN'S, NEWFOUNDLAND

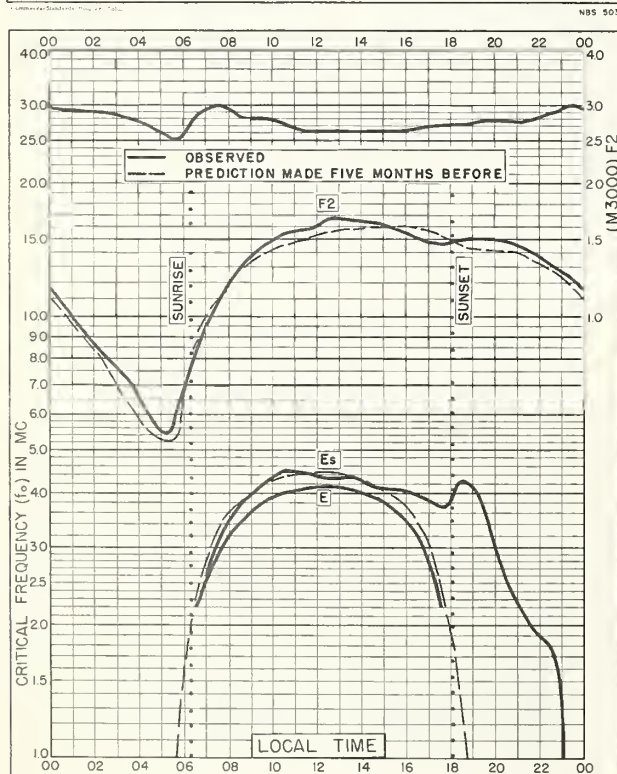


Fig. 15. MAUI, HAWAII  
20.8°N, 156.5°W  
MARCH 1958

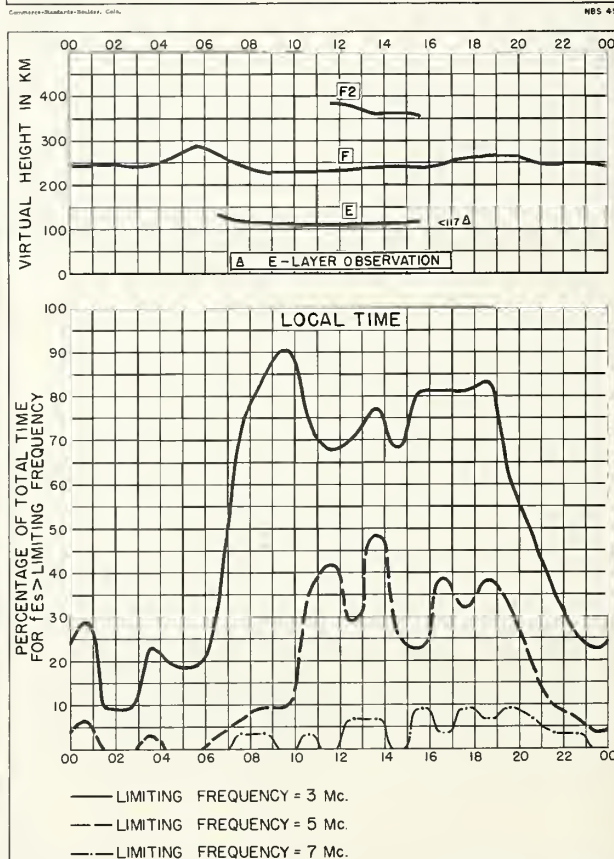


Fig. 16. MAUI, HAWAII  
MARCH 1958



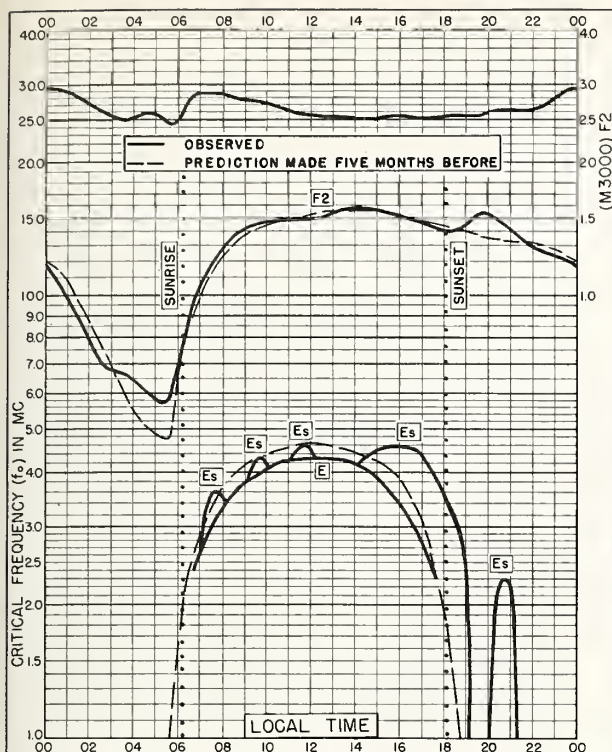


Fig. 17. PANAMA CANAL ZONE  
9.4°N, 79.9°W

MARCH 1958

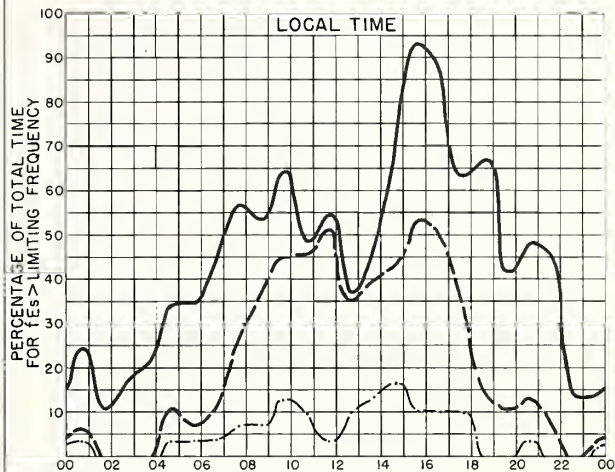
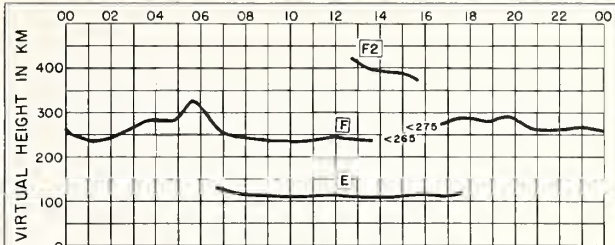


Fig. 18. PANAMA CANAL ZONE

MARCH 1958

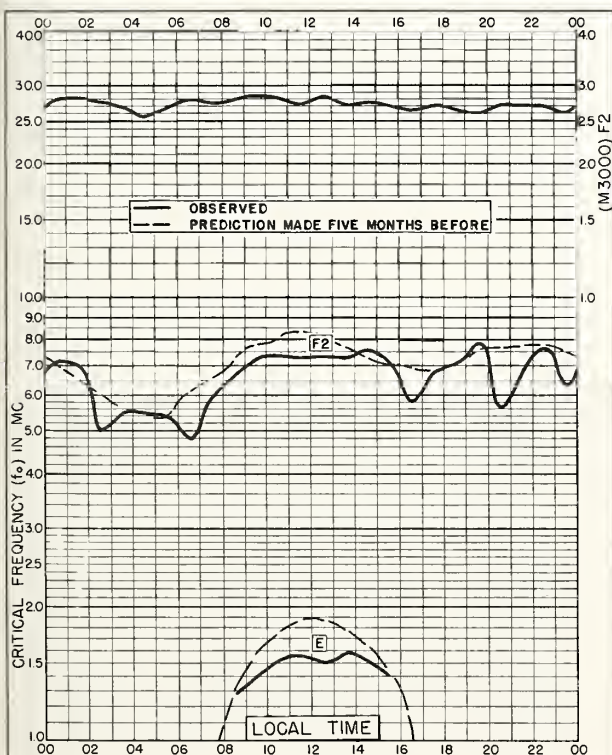


Fig. 19. FLETCHERS ICE I.  
80.0°N, 112.0°W

FEBRUARY 1958

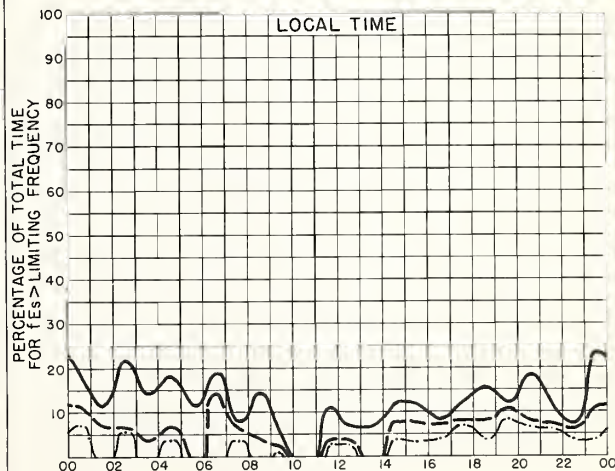
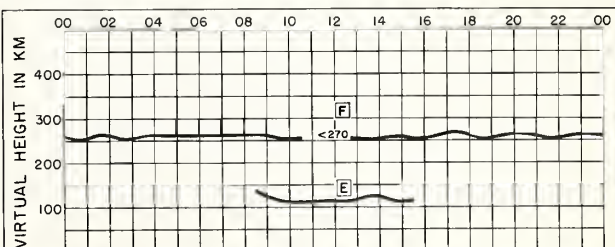


Fig. 20. FLETCHERS ICE I.

FEBRUARY 1958

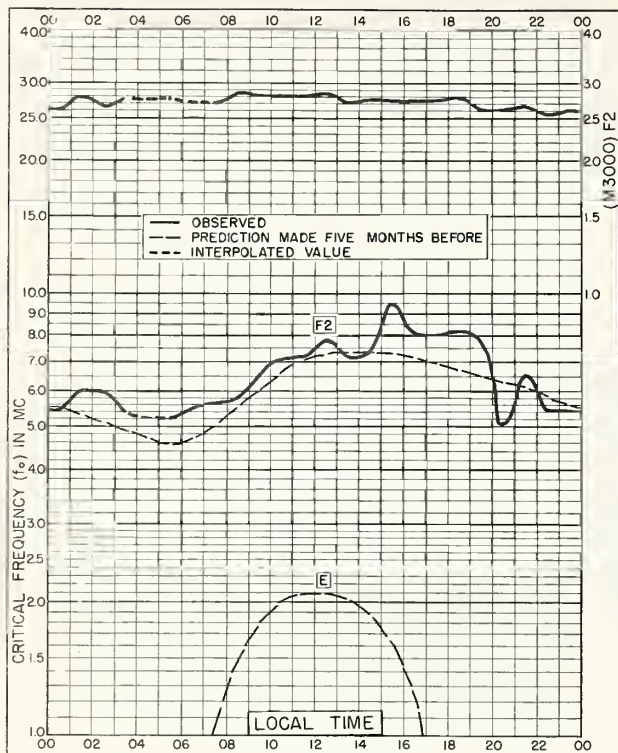


Fig. 21. THULE, GREENLAND  
76.6°N, 68.7°W FEBRUARY 1958

NBS 503

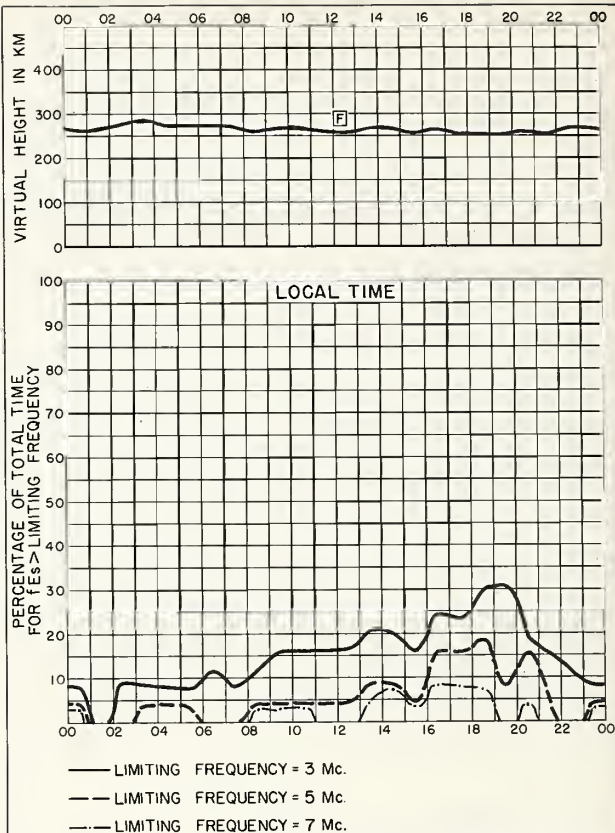


Fig. 22. THULE, GREENLAND FEBRUARY 1958

NBS 490

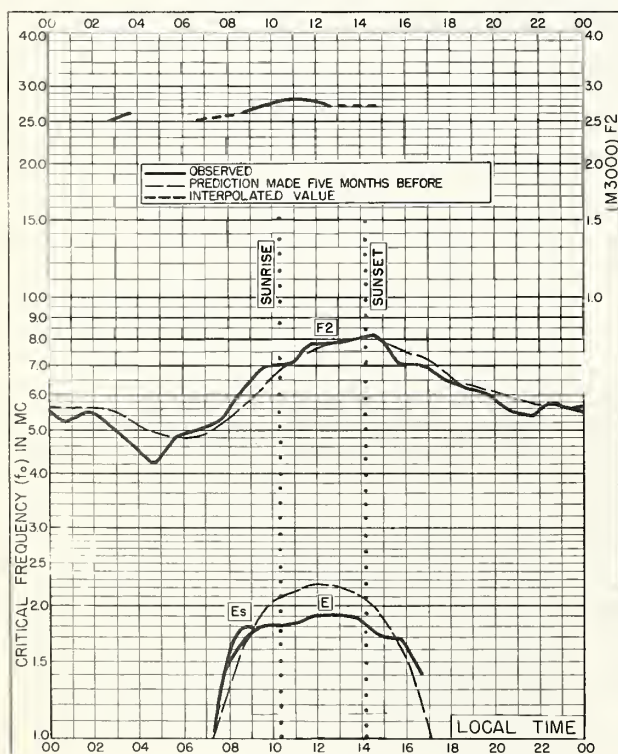


Fig. 23. RESOLUTE BAY, CANADA  
74.7°N, 94.9°W FEBRUARY 1958

NBS 503

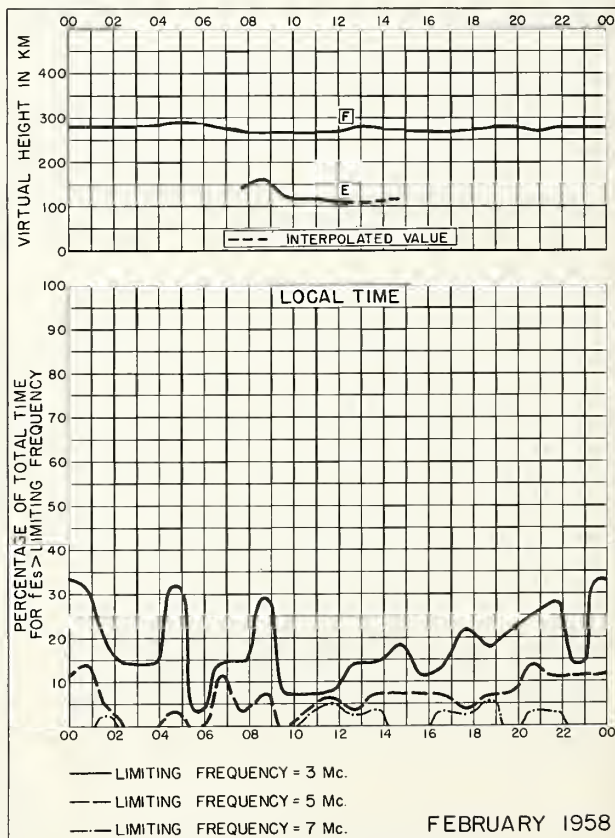


Fig. 24. RESOLUTE BAY, CANADA

FEBRUARY 1958

NBS 490



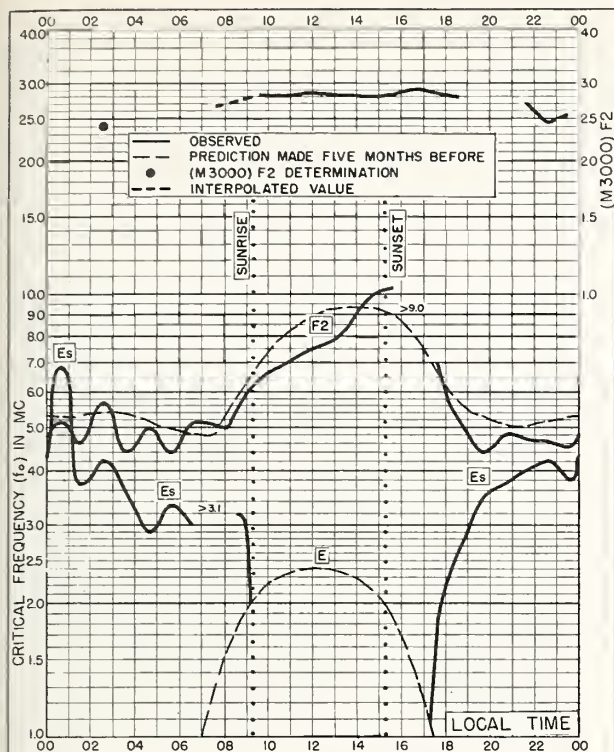


Fig. 25. POINT BARROW, ALASKA  
71.3°N, 156.8°W FEBRUARY 1958

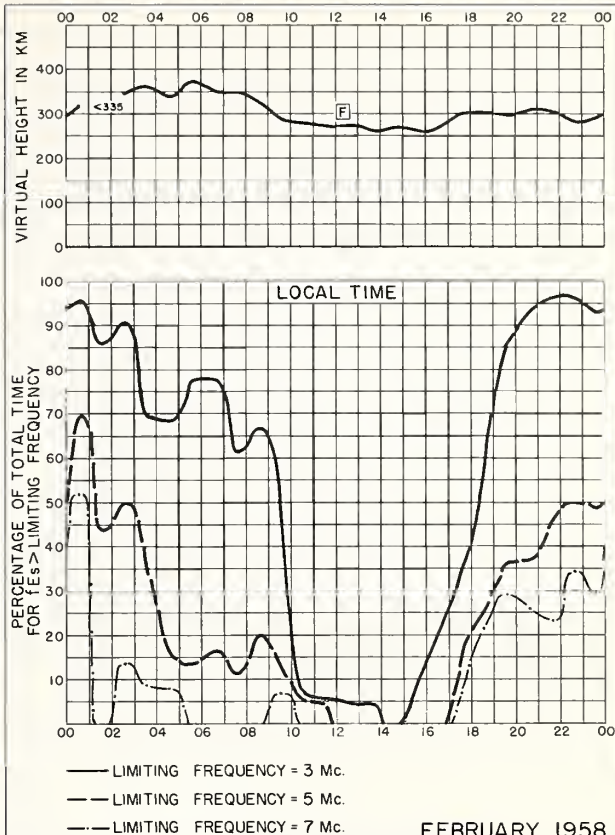


Fig. 26. POINT BARROW, ALASKA

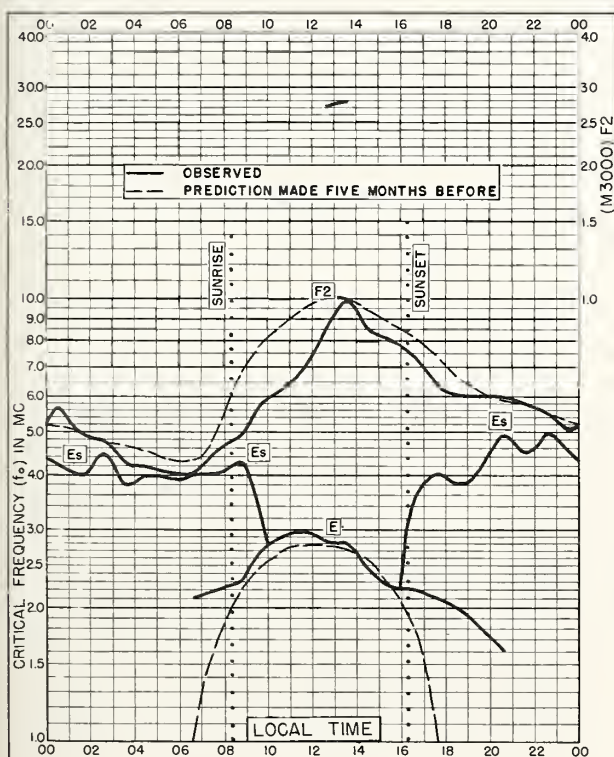


Fig. 27. BAKER LAKE, CANADA  
64.3°N, 96.0°W FEBRUARY 1958

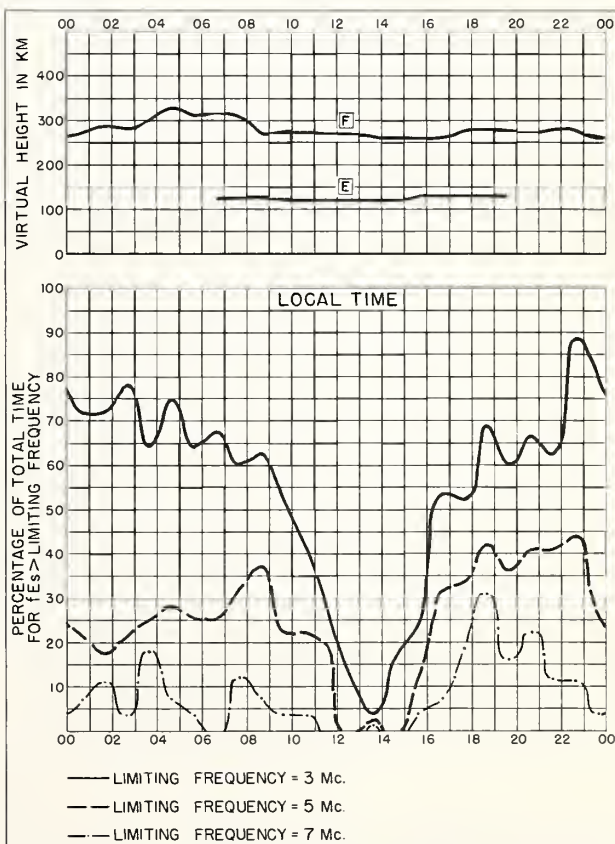
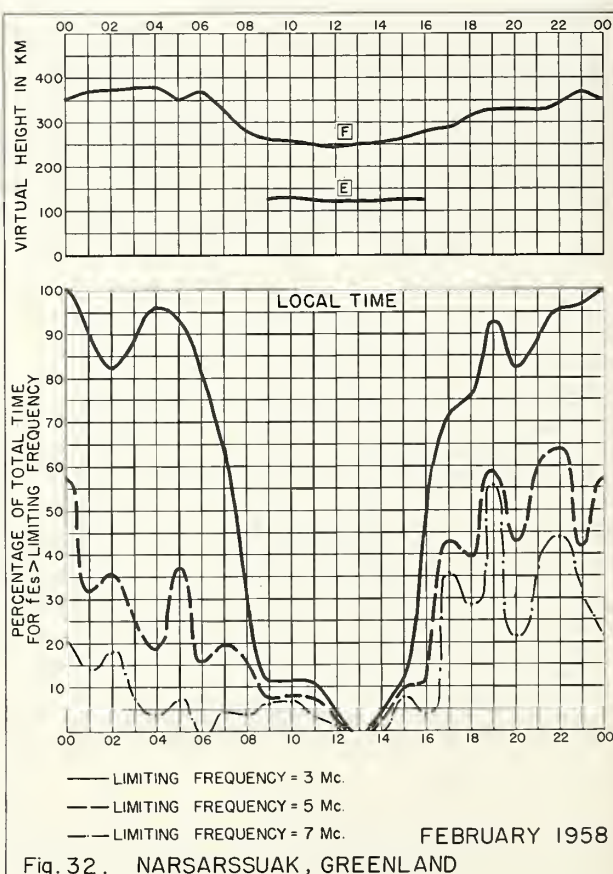
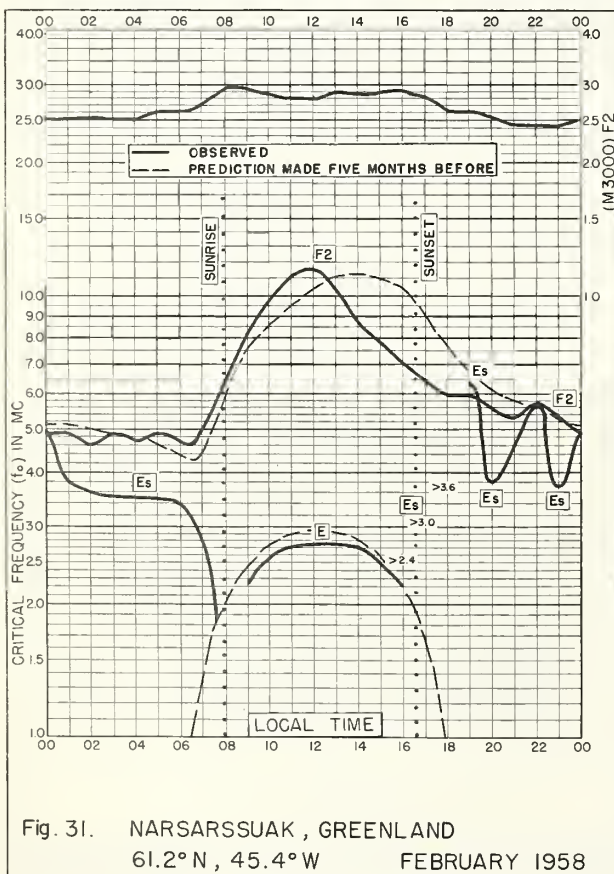
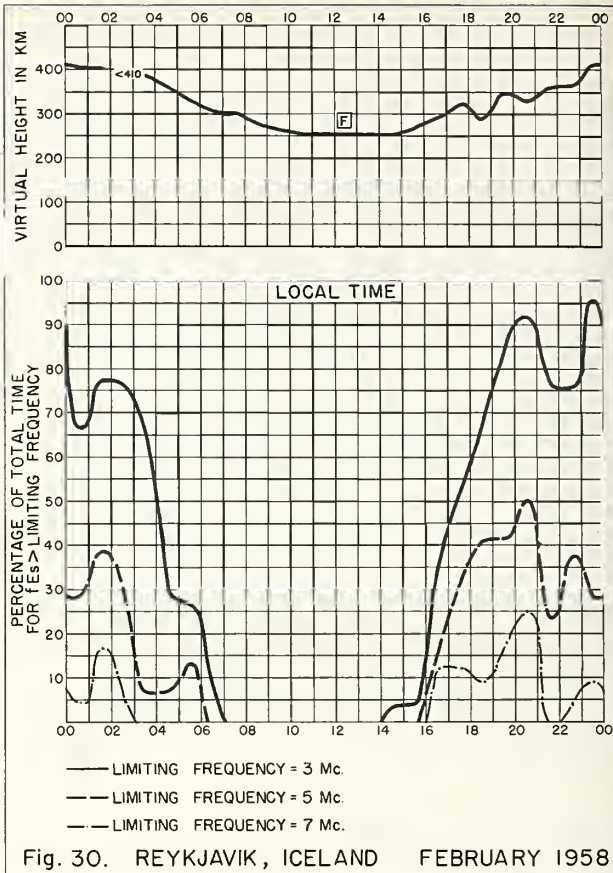
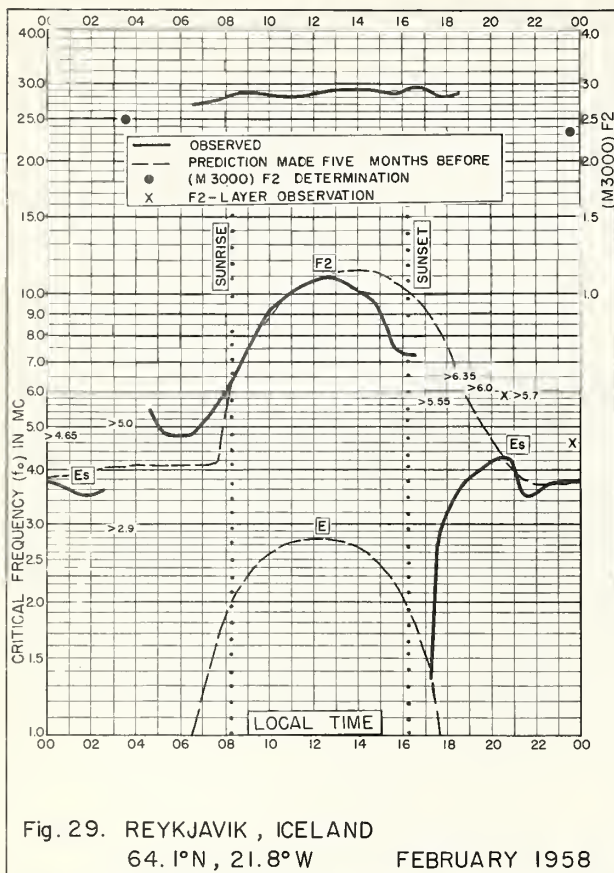


Fig. 28. BAKER LAKE, CANADA FEBRUARY 1958





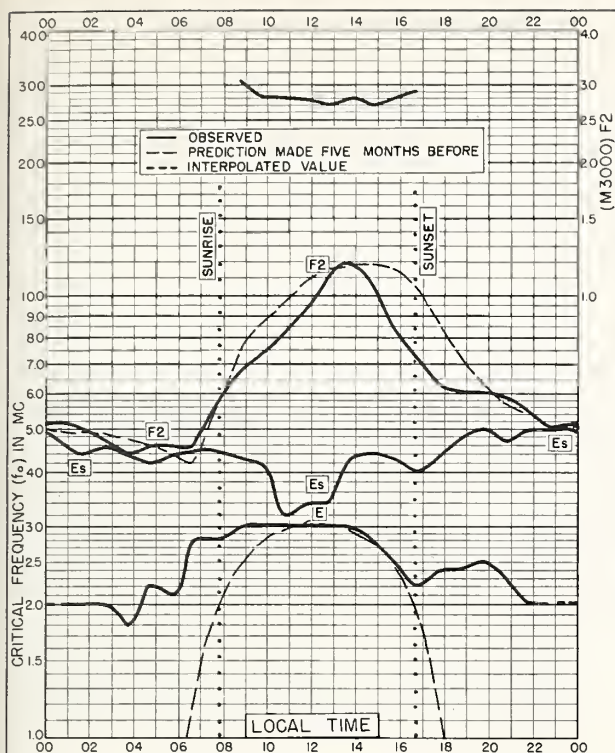


Fig. 33. CHURCHILL, CANADA  
58.8°N, 94.2°W  
FEBRUARY 1958

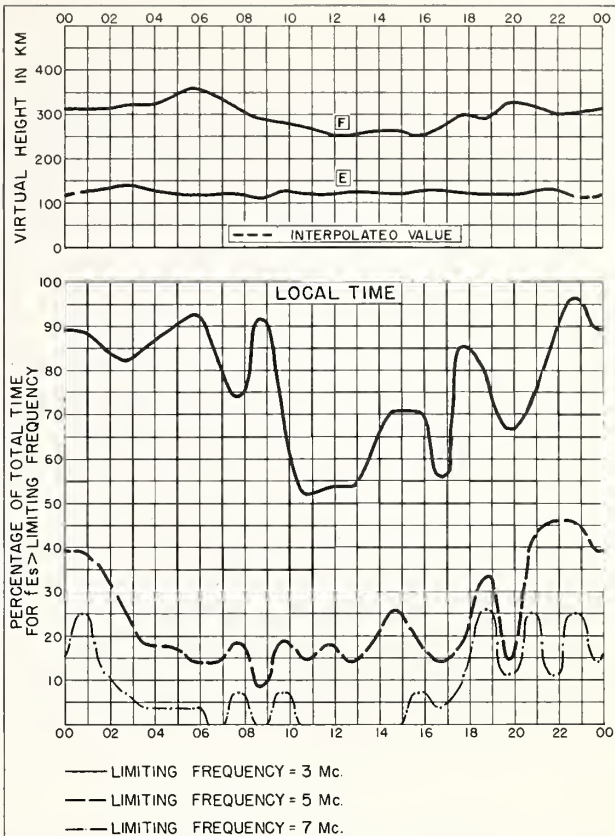


Fig. 34. CHURCHILL, CANADA  
FEBRUARY 1958

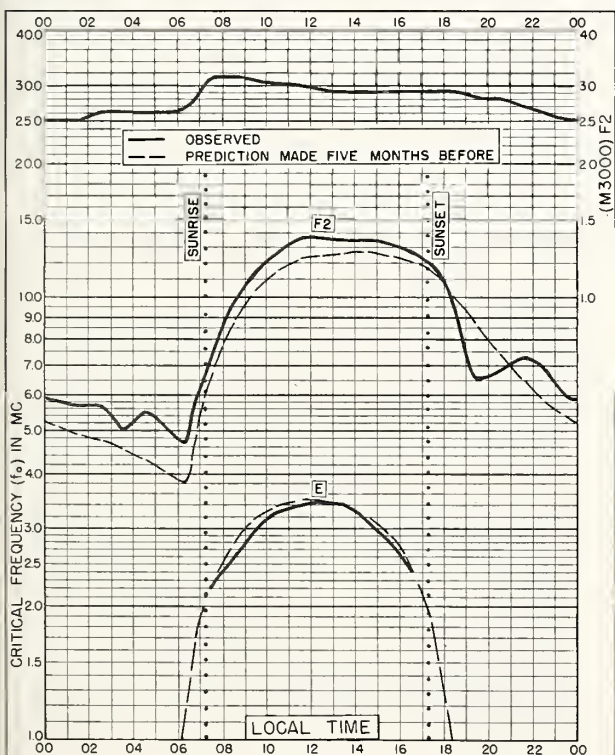


Fig. 35. ST. JOHN'S, NEWFOUNDLAND  
47.6°N, 52.7°W  
FEBRUARY 1958

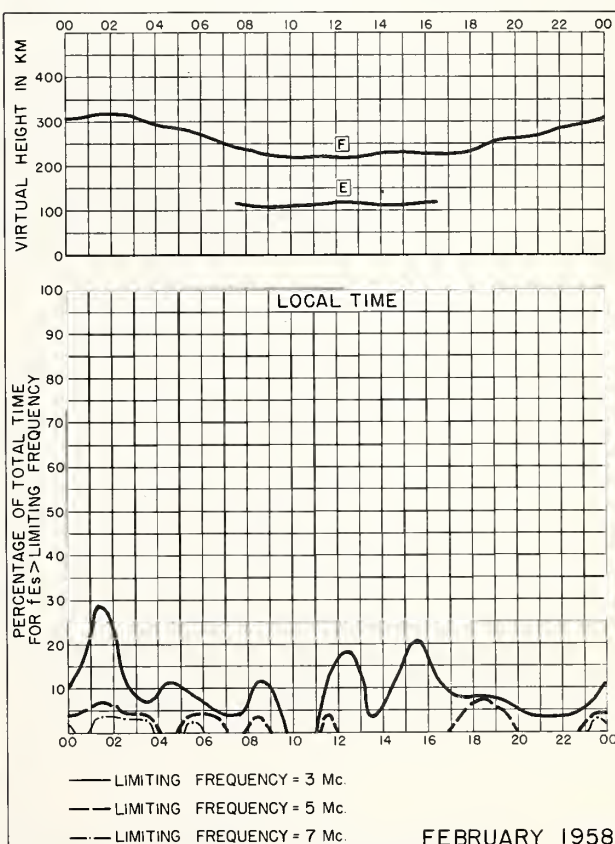


Fig. 36. ST. JOHN'S, NEWFOUNDLAND  
FEBRUARY 1958

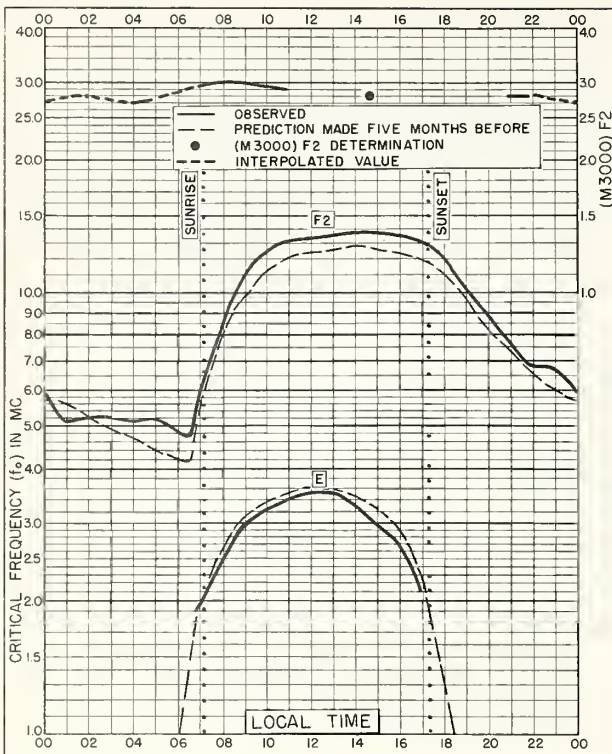


Fig. 37. OTTAWA, CANADA  
45.4°N, 75.9°W  
FEBRUARY 1958

Continued—Boulder-Boulder, Colo. NBS 503

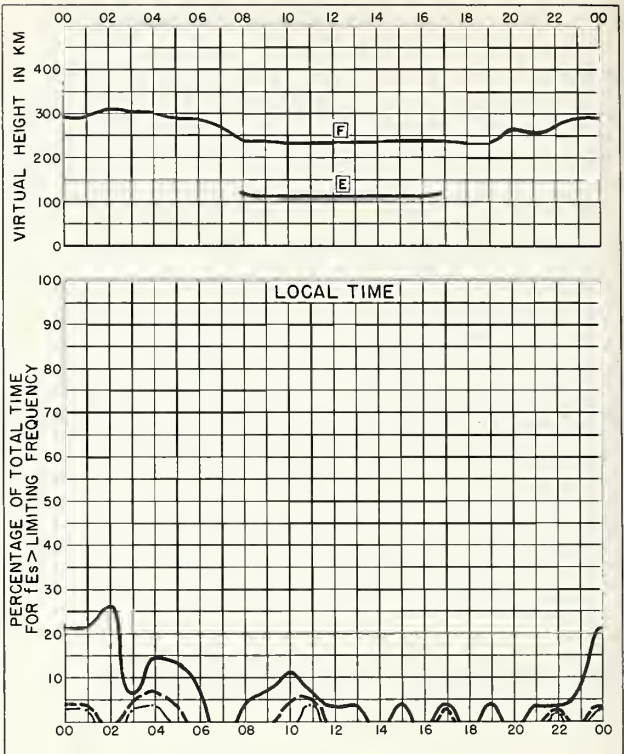


Fig. 38. OTTAWA, CANADA  
FEBRUARY 1958

Continued—Boulder-Boulder, Colo. NBS 490

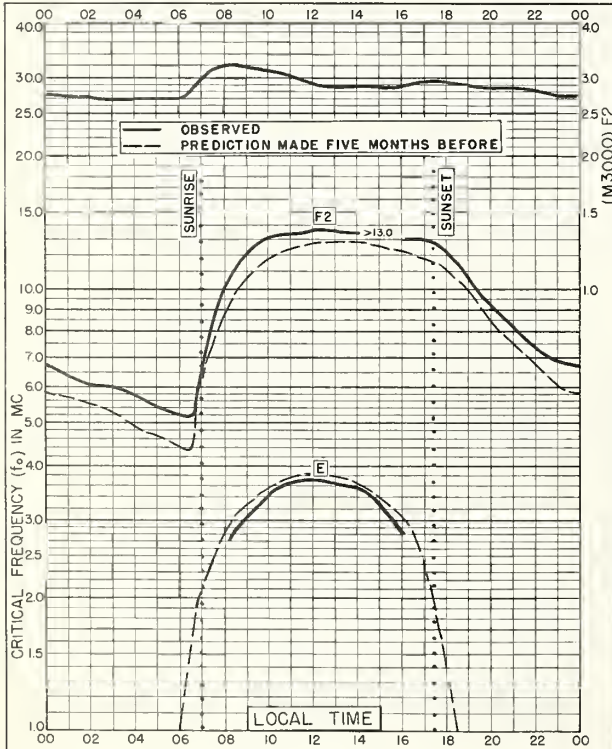


Fig. 39. FT. MONMOUTH, NEW JERSEY  
40.4°N, 74.1°W  
FEBRUARY 1958

Continued—Boulder-Boulder, Colo. NBS 503

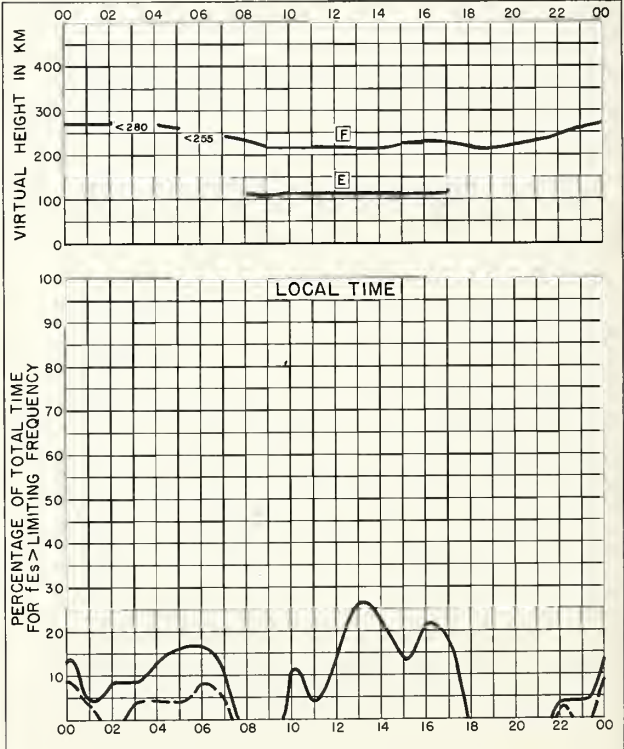


Fig. 40. FT. MONMOUTH, NEW JERSEY  
FEBRUARY 1958

Continued—Boulder-Boulder, Colo. NBS 490



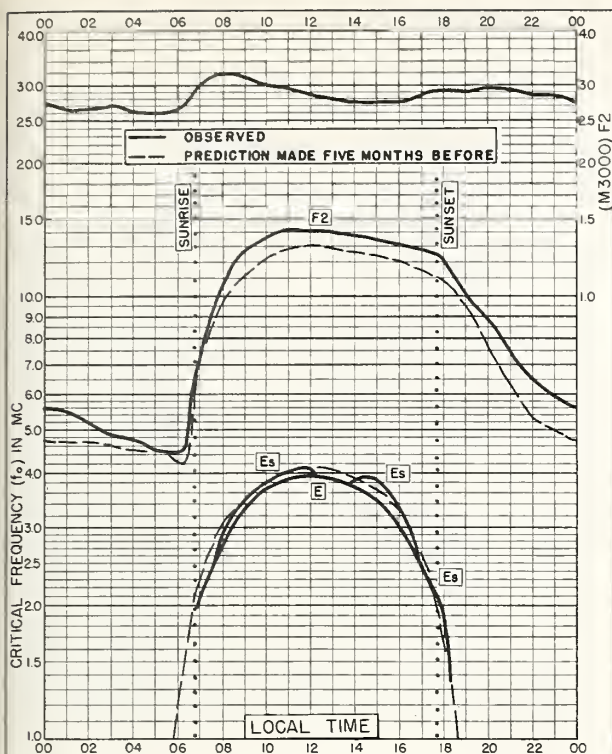


Fig. 41. WHITE SANDS, NEW MEXICO  
32.3°N, 106.5°W FEBRUARY 1958

Compton-Standard-Builder, Co.

NBS 503

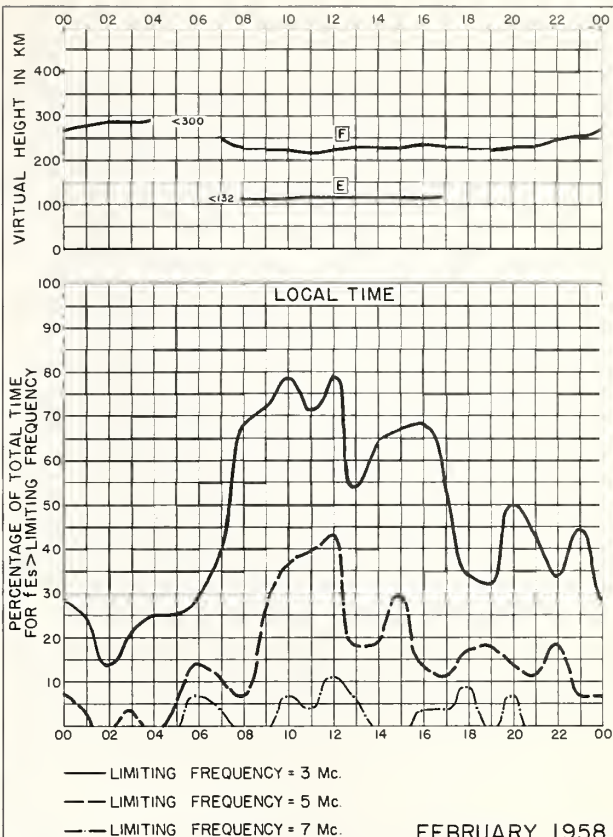


Fig. 42. WHITE SANDS, NEW MEXICO  
FEBRUARY 1958

Compton-Standard-Builder, Co.

NBS 490

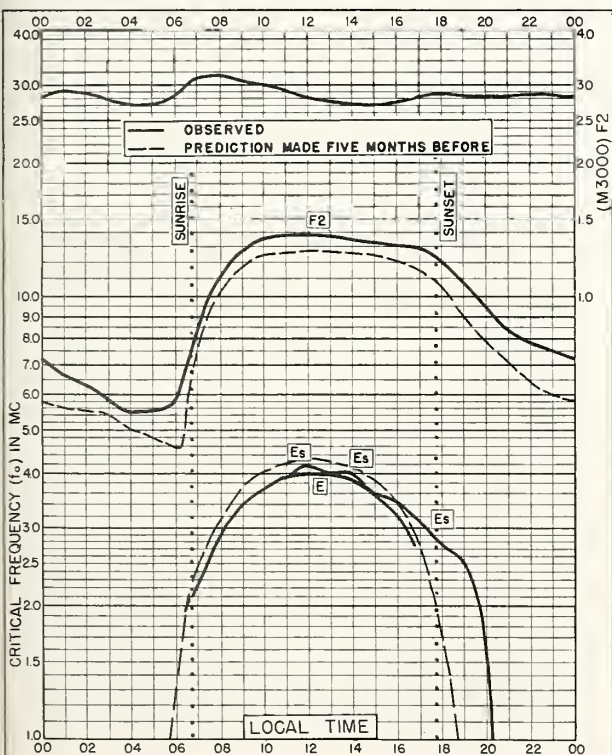


Fig. 43. GRAND BAHAMA I.  
26.6°N, 78.2°W FEBRUARY 1958

Compton-Standard-Builder, Co.

NBS 503

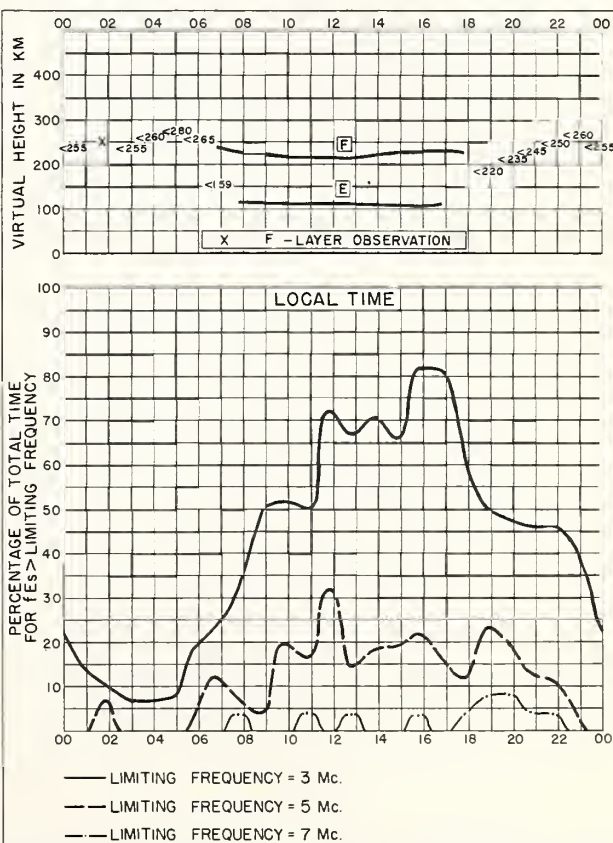


Fig. 44. GRAND BAHAMA I. FEBRUARY 1958

Compton-Standard-Builder, Co.

NBS 490

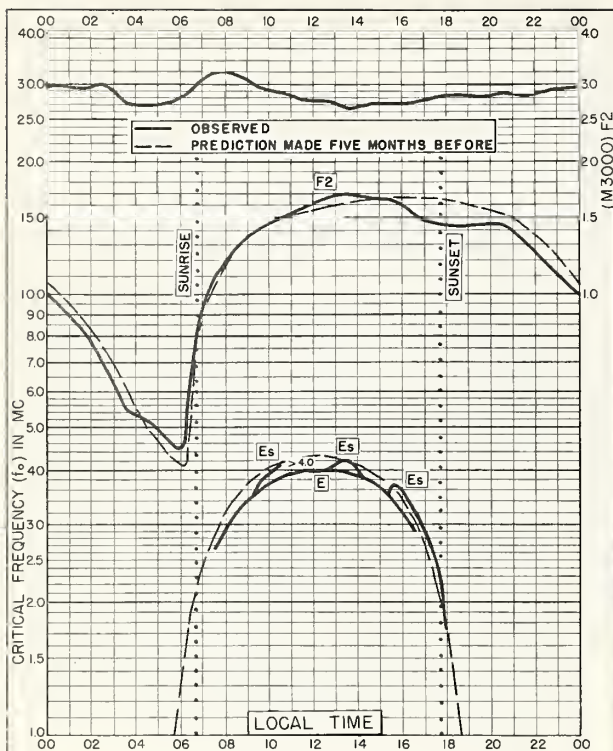


Fig. 45. OKINAWA I.  
26.3°N, 127.8°E FEBRUARY 1958

NBS 503

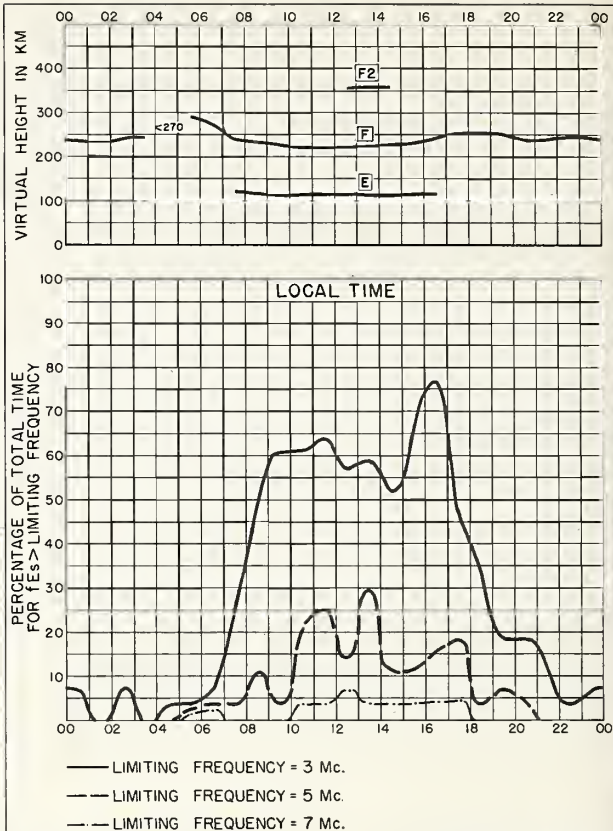


Fig. 46. OKINAWA I. FEBRUARY 1958

NBS 490

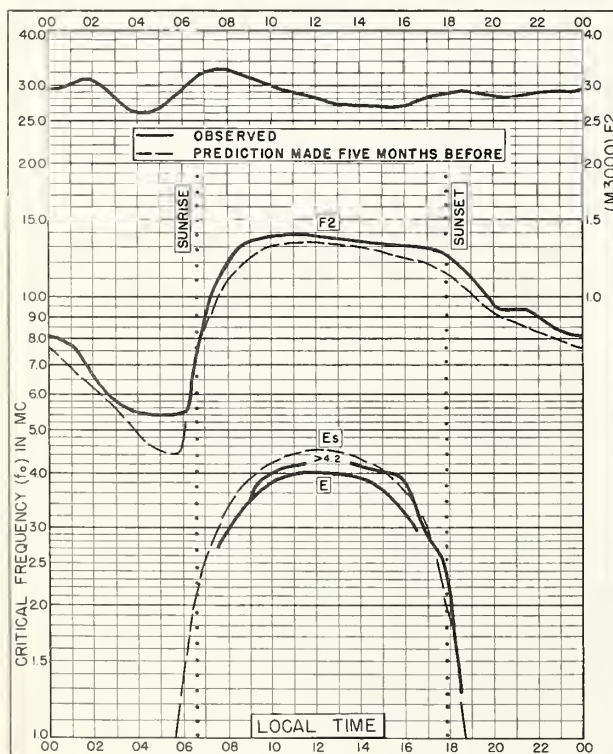


Fig. 47. PUERTO RICO, W.I.  
18.5°N, 67.2°W FEBRUARY 1958

NBS 503

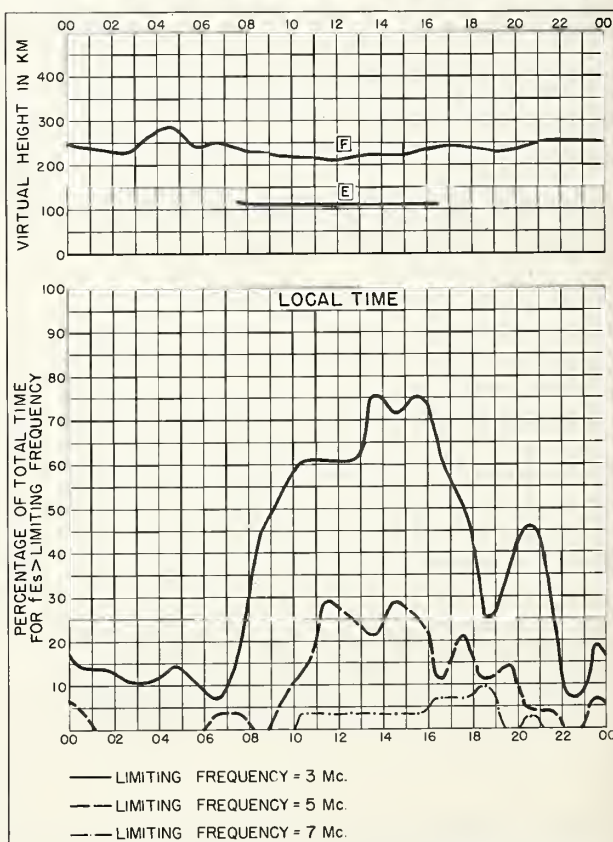


Fig. 48. PUERTO RICO, W.I. FEBRUARY 1958

NBS 490



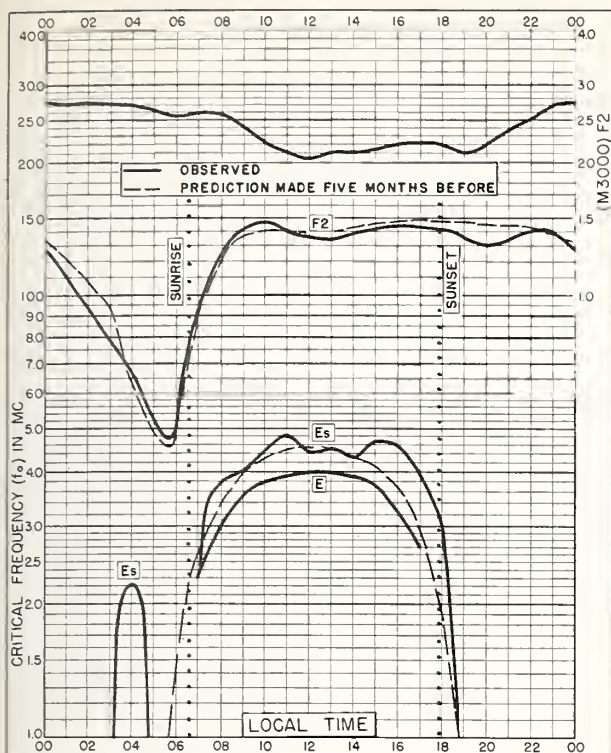


Fig. 49. BAGUIO, P. I.

16.4°N, 120.6°E

FEBRUARY 1958

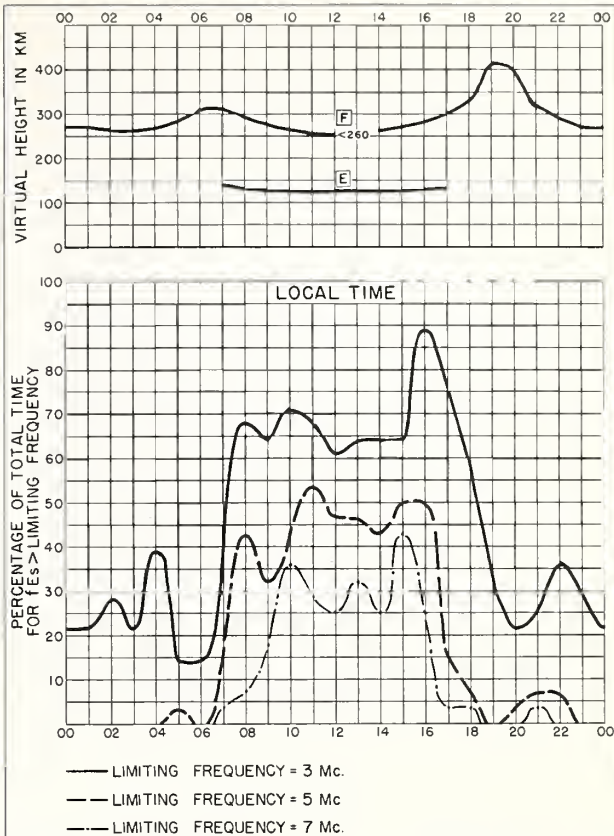


Fig. 50. BAGUIO, P. I.

FEBRUARY 1958

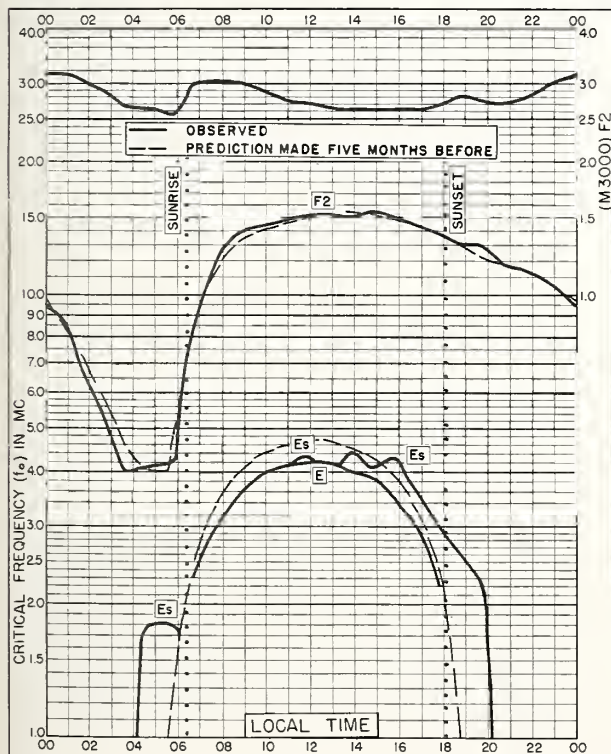


Fig. 51. PANAMA CANAL ZONE

9.4°N, 79.9°W

FEBRUARY 1958

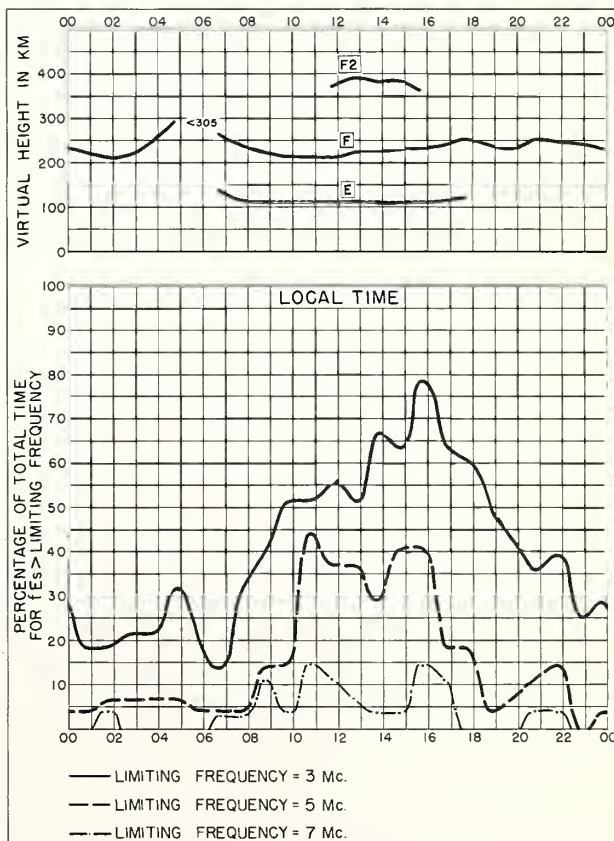


Fig. 52. PANAMA CANAL ZONE FEBRUARY 1958

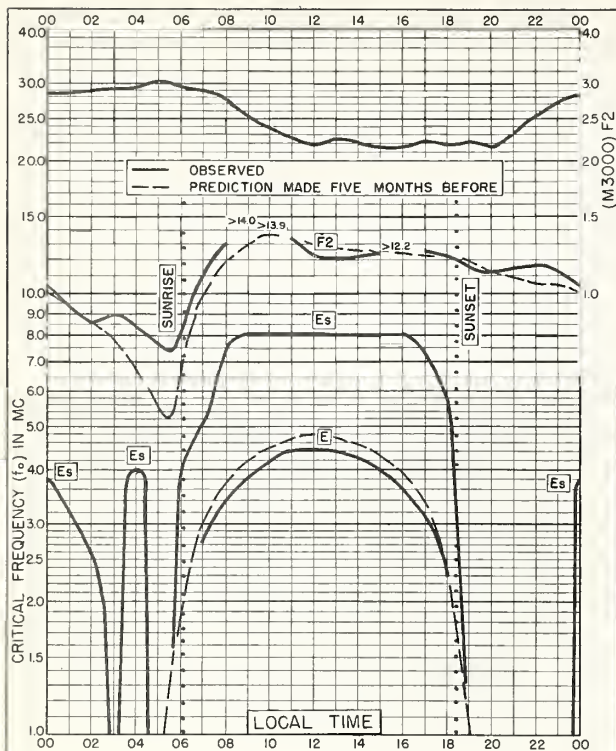


Fig. 53. HUANCAYO, PERU  
12.0°S, 75.3°W

FEBRUARY 1958

NBS 503

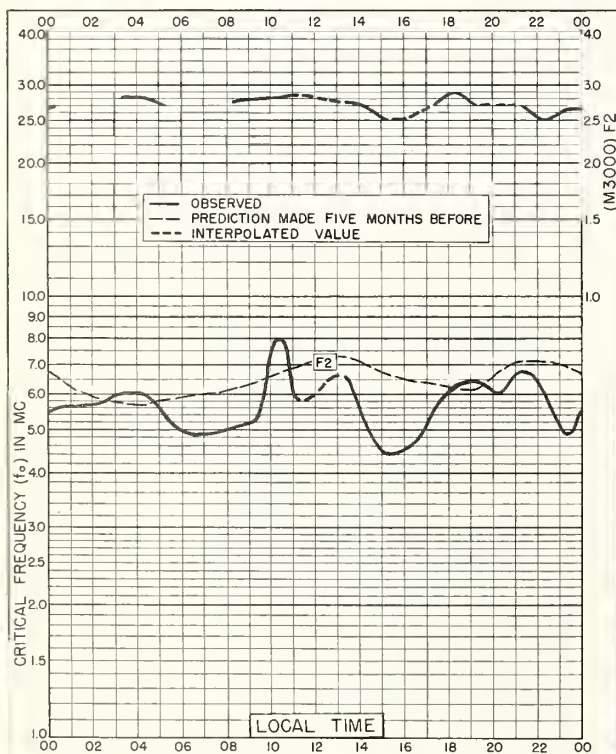


Fig. 55. FLETCHERS ICE I.  
79.0°N, 116.0°W

JANUARY 1958

NBS 503

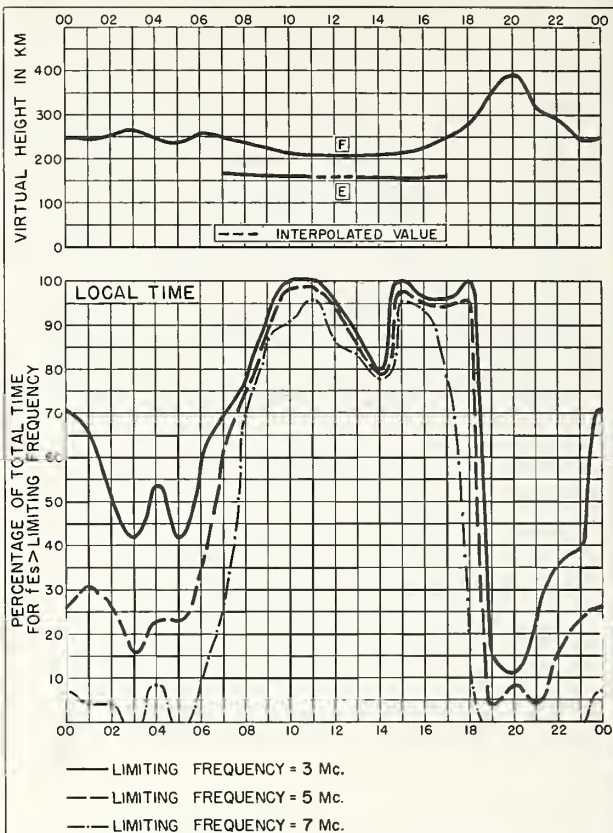


Fig. 54. HUANCAYO, PERU

FEBRUARY 1958

NBS 490

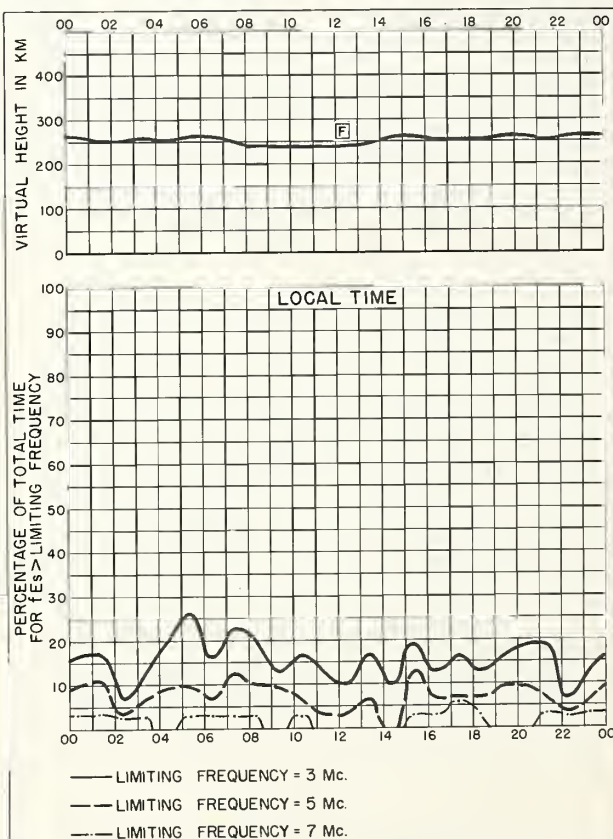


Fig. 56. FLETCHERS ICE I.

JANUARY 1958

NBS 490



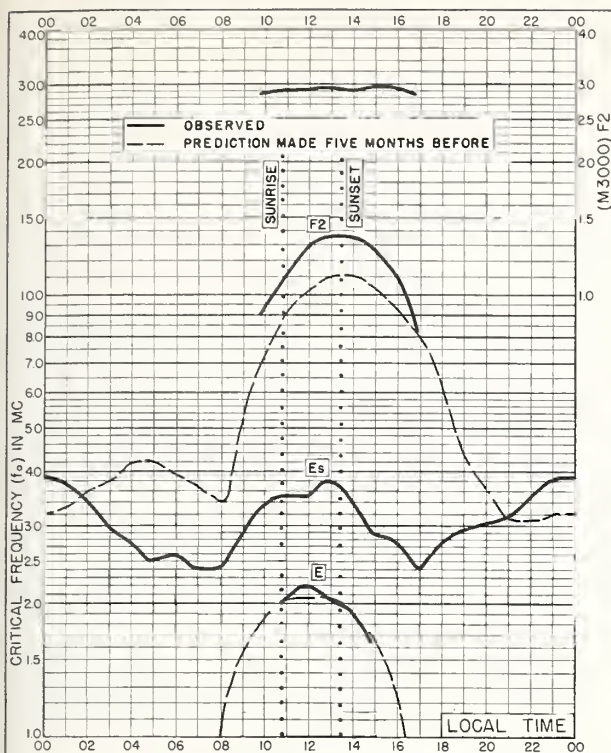


Fig. 57. SODANKYLÄ, FINLAND  
67.4°N, 26.6°E  
JANUARY 1958

Commercial Standards Institute, Cedar Rapids, Iowa

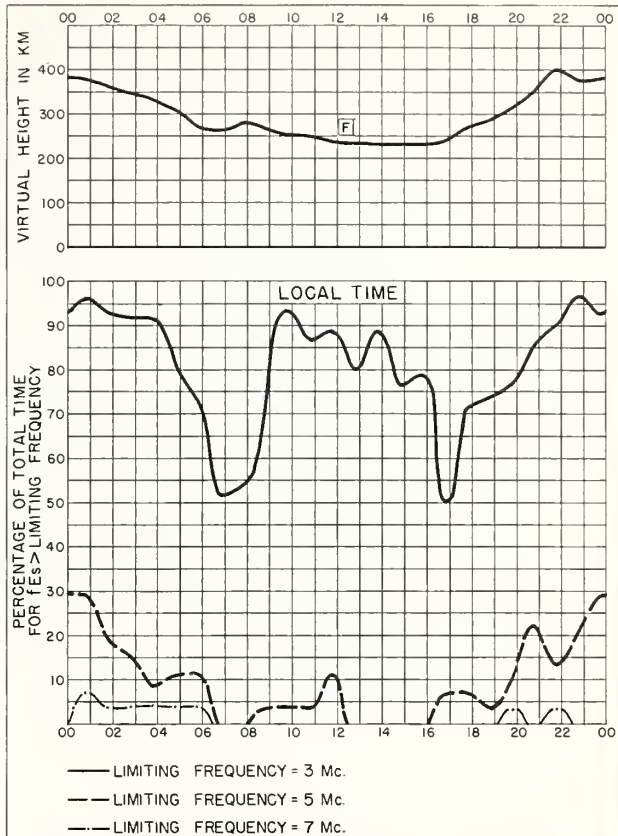


Fig. 58. SODANKYLÄ, FINLAND  
JANUARY 1958

Commercial Standards Institute, Cedar Rapids, Iowa

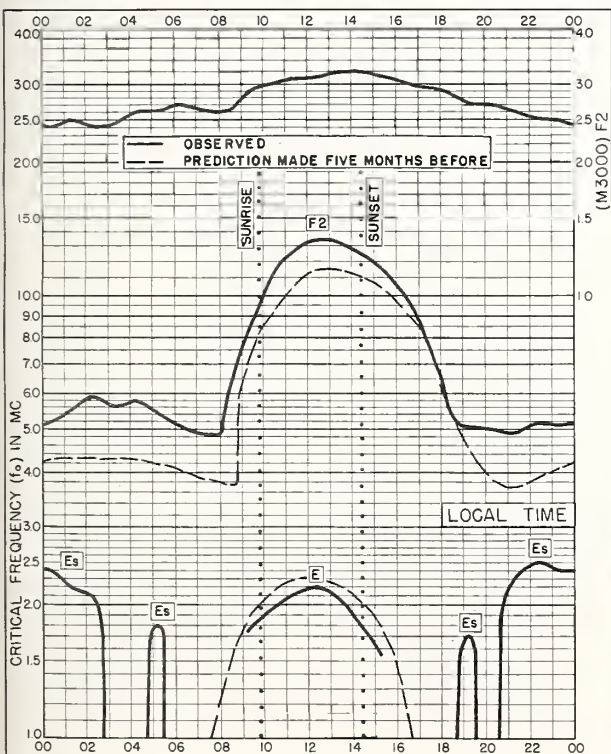


Fig. 59. LYCKSELE, SWEDEN  
64.6°N, 18.8°E  
JANUARY 1958

Commercial Standards Institute, Cedar Rapids, Iowa

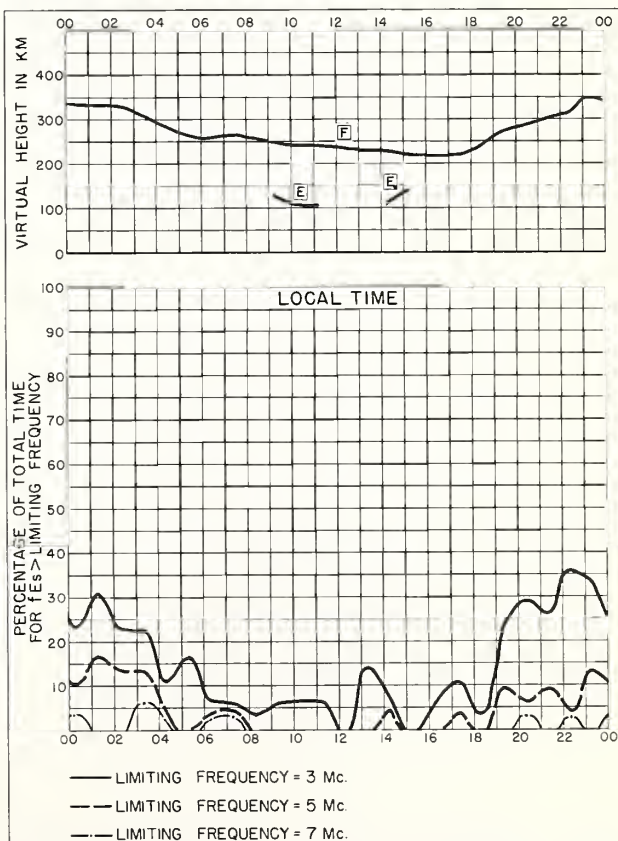


Fig. 60. LYCKSELE, SWEDEN  
JANUARY 1958

Commercial Standards Institute, Cedar Rapids, Iowa

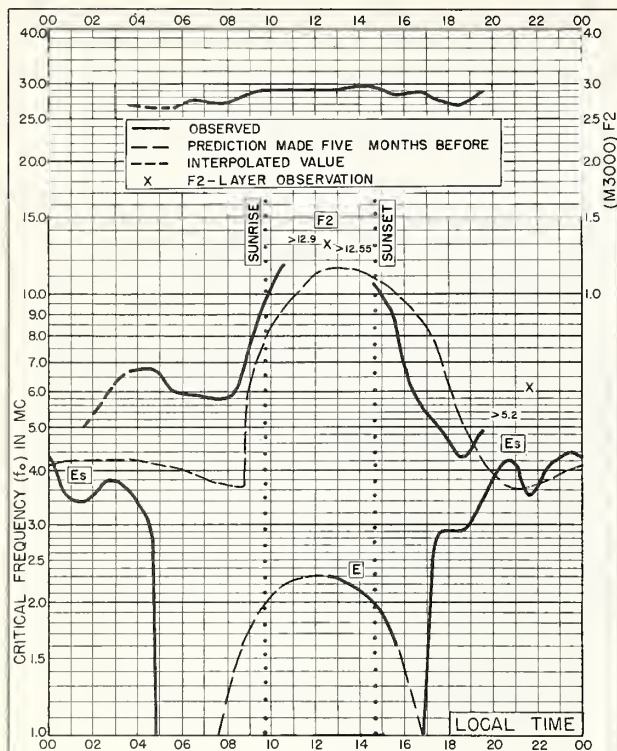


Fig. 61. REYKJAVIK, ICELAND  
64.1°N, 21.8°W

JANUARY 1958

Commence-Standard-Builder, Col.

NBS 503

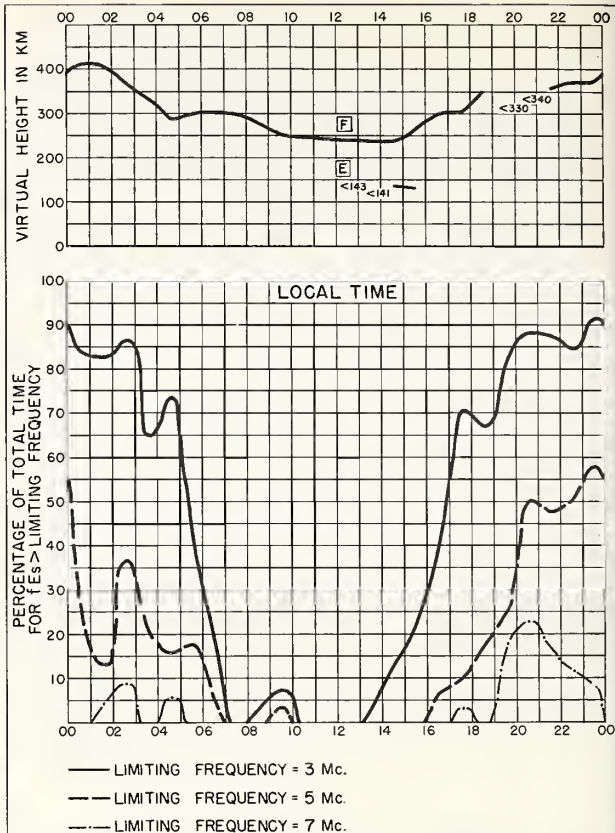


Fig. 62. REYKJAVIK, ICELAND JANUARY 1958

Commence-Standard-Builder, Col.

NBS 490

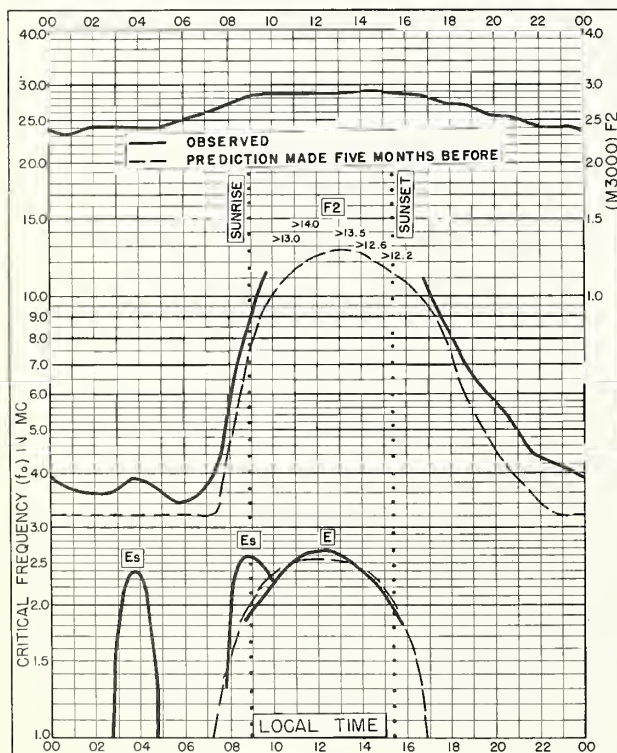


Fig. 63. OSLO, NORWAY  
60.0°N, 11.1°E

JANUARY 1958

Commence-Standard-Builder, Col.

NBS 503

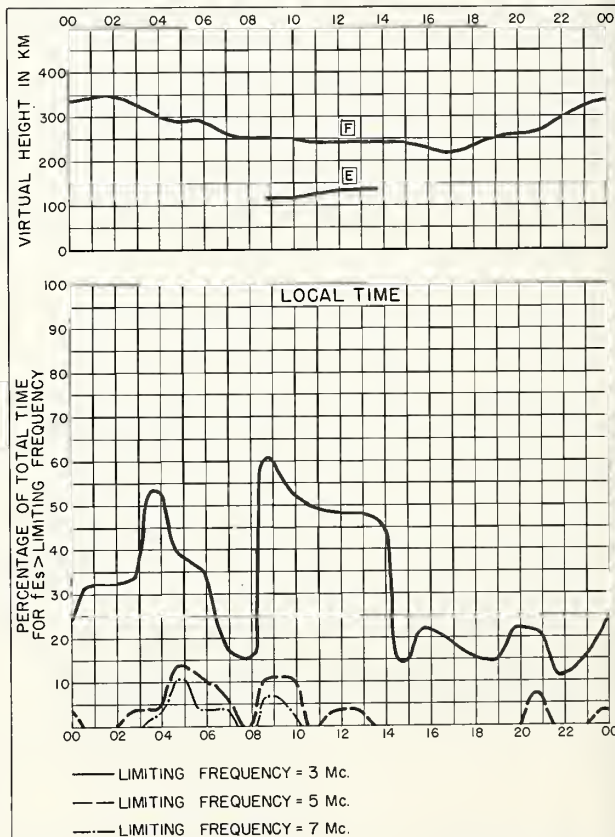


Fig. 64. OSLO, NORWAY JANUARY 1958

Commence-Standard-Builder, Col.

NBS 490



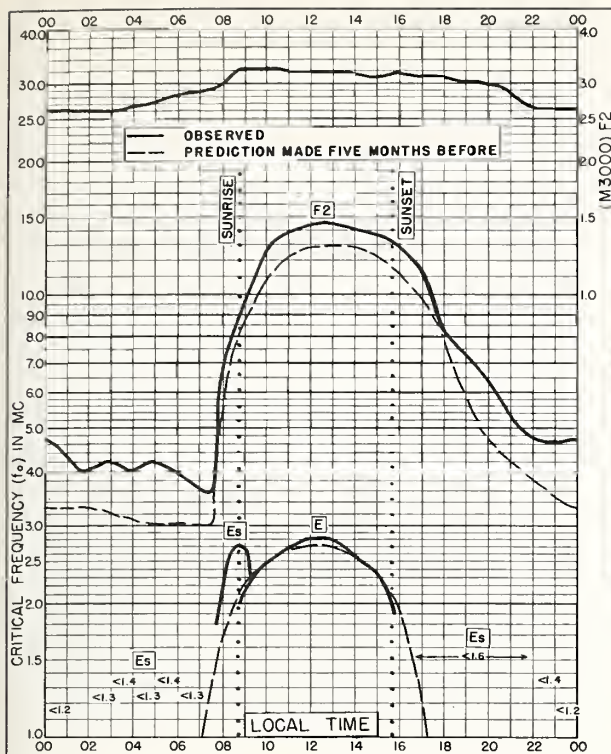


Fig. 65. INVERNESS, SCOTLAND  
57.4°N, 4.2°W  
JANUARY 1958

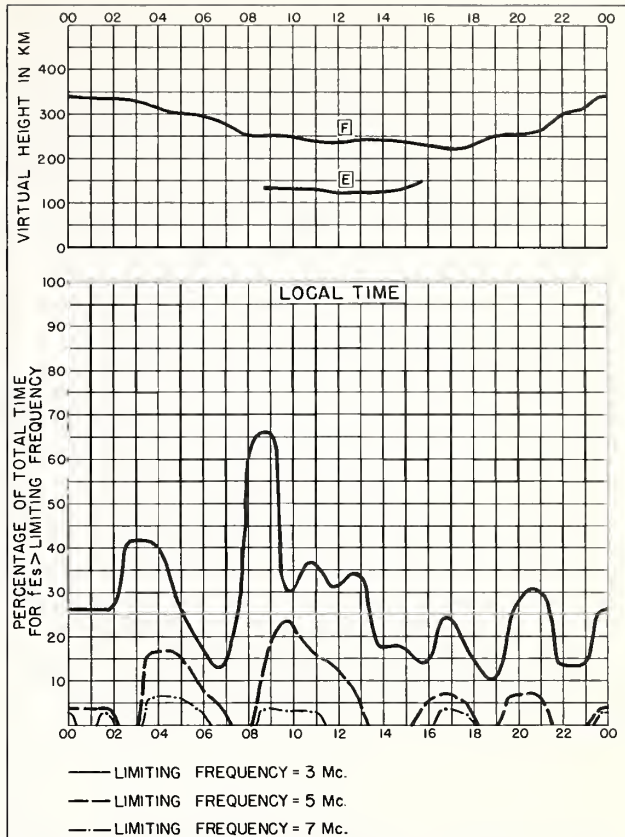


Fig. 66. INVERNESS, SCOTLAND  
JANUARY 1958

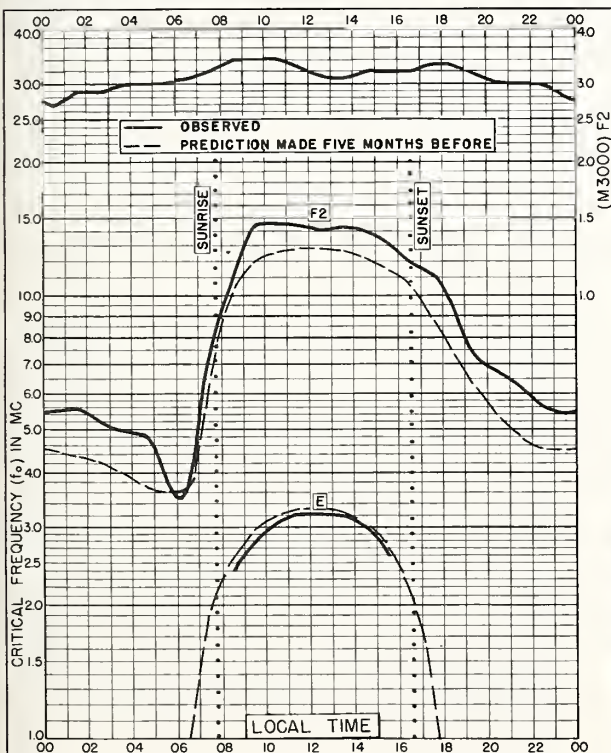


Fig. 67. SCHWARZENBURG, SWITZERLAND  
46.8°N, 7.3°E  
JANUARY 1958

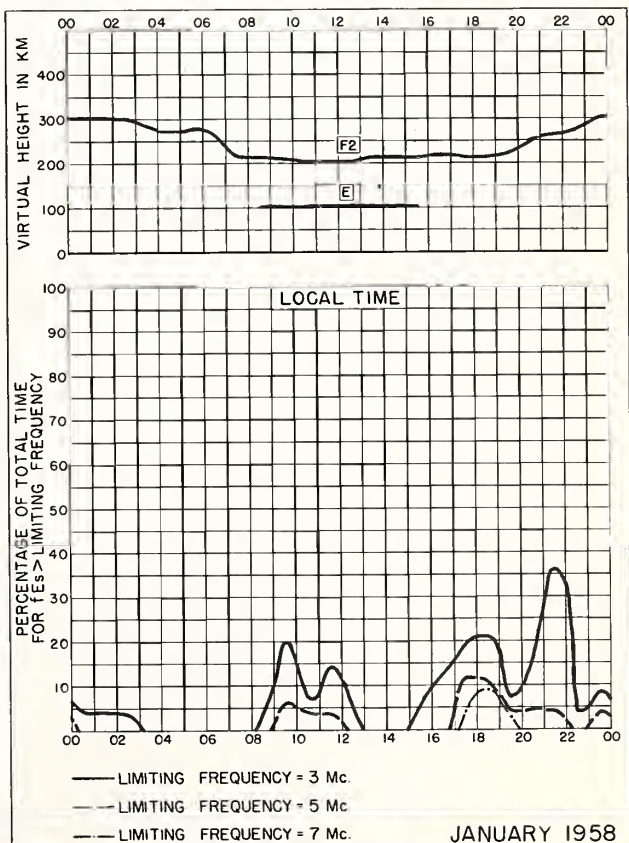


Fig. 68. SCHWARZENBURG, SWITZERLAND  
JANUARY 1958

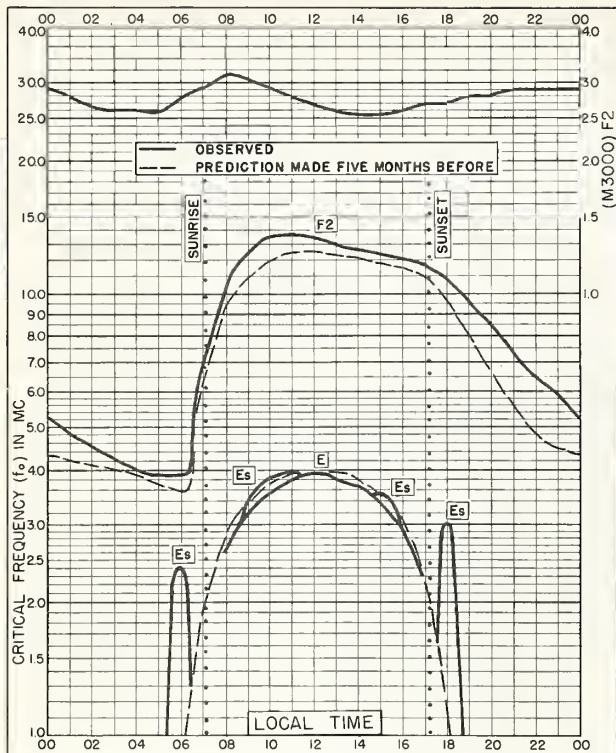


Fig. 69. WHITE SANDS, NEW MEXICO  
32.3°N, 106.5°W JANUARY 1958

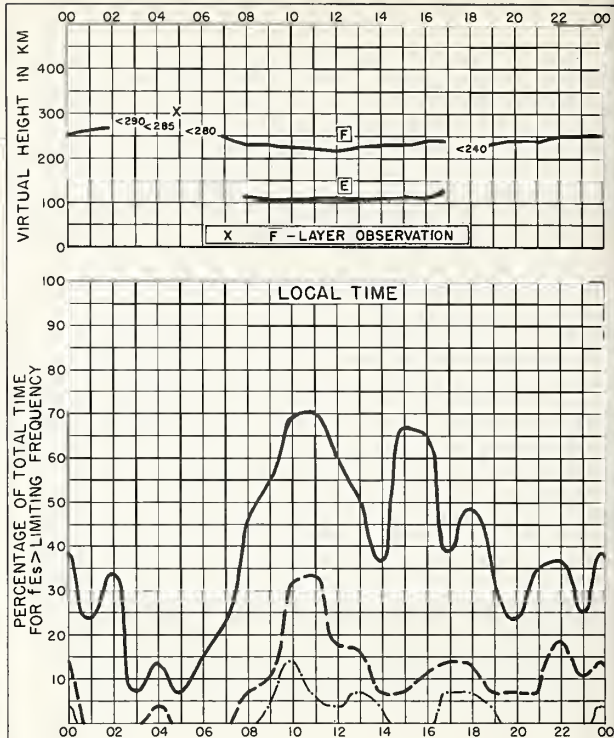


Fig. 70. WHITE SANDS, NEW MEXICO  
JANUARY 1958

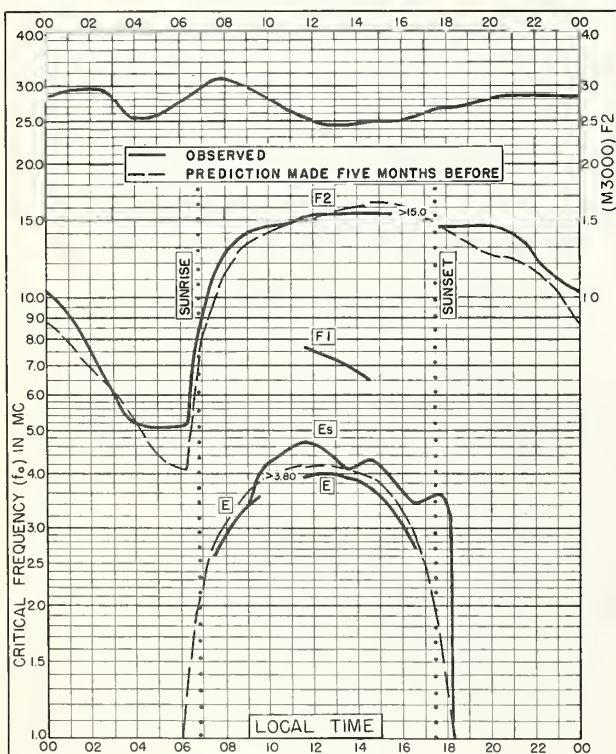


Fig. 71. OKINAWA I.  
26.3°N, 127.8°E JANUARY 1958

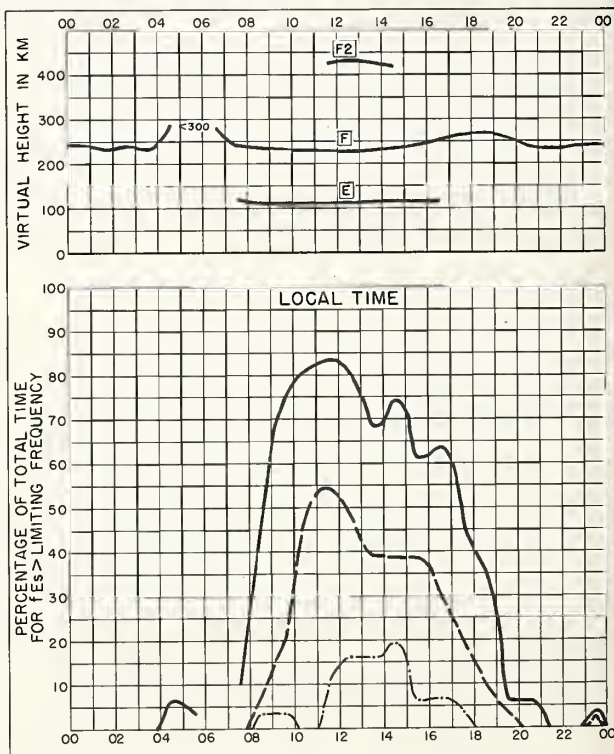


Fig. 72. OKINAWA I.  
JANUARY 1958



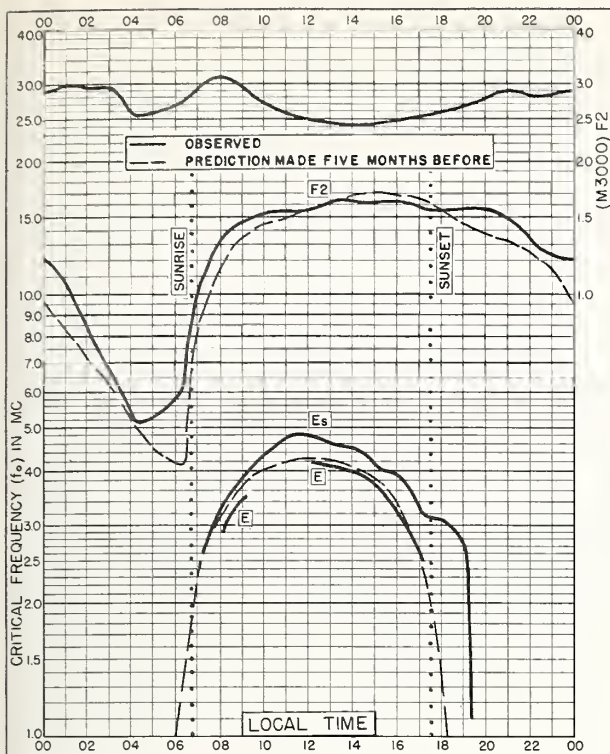


Fig. 73. FORMOSA, CHINA  
25.0°N, 121.5°E

JANUARY 1958

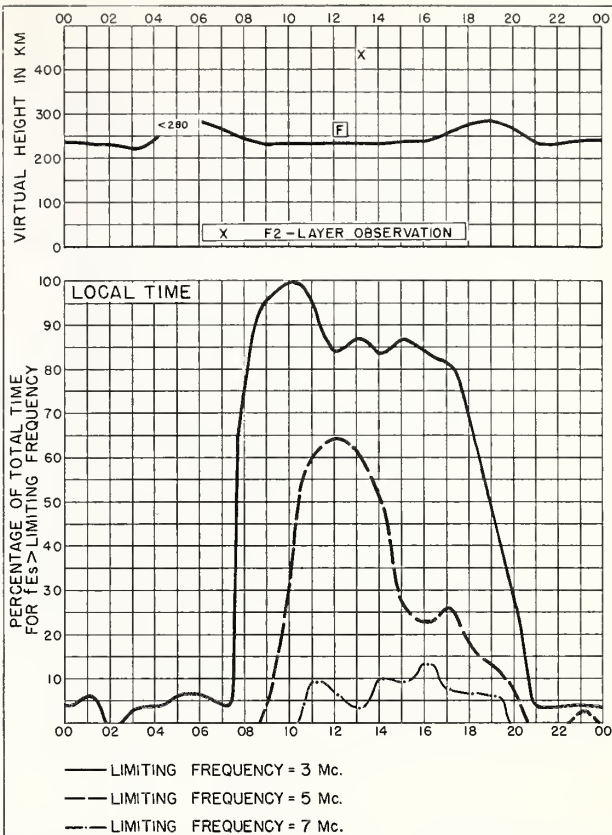


Fig. 74. FORMOSA, CHINA

JANUARY 1958

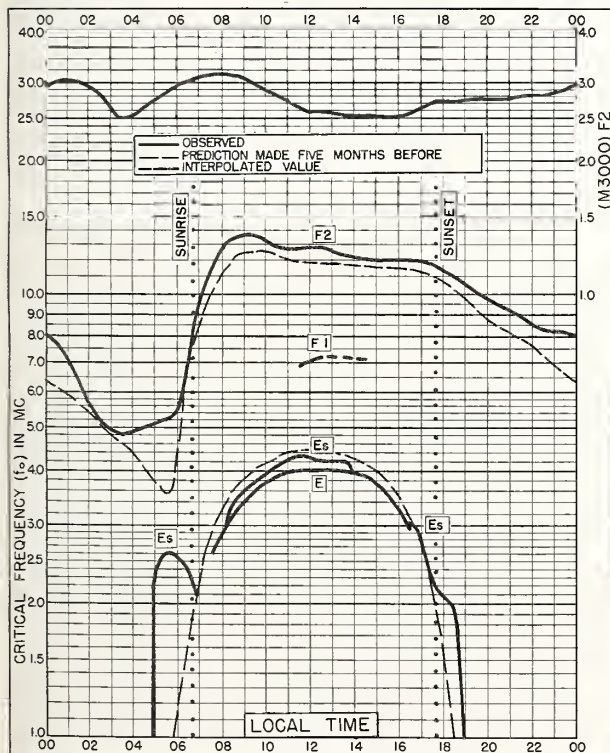


Fig. 75. PUERTO RICO, W.I.  
18.5°N, 67.2°W

JANUARY 1958

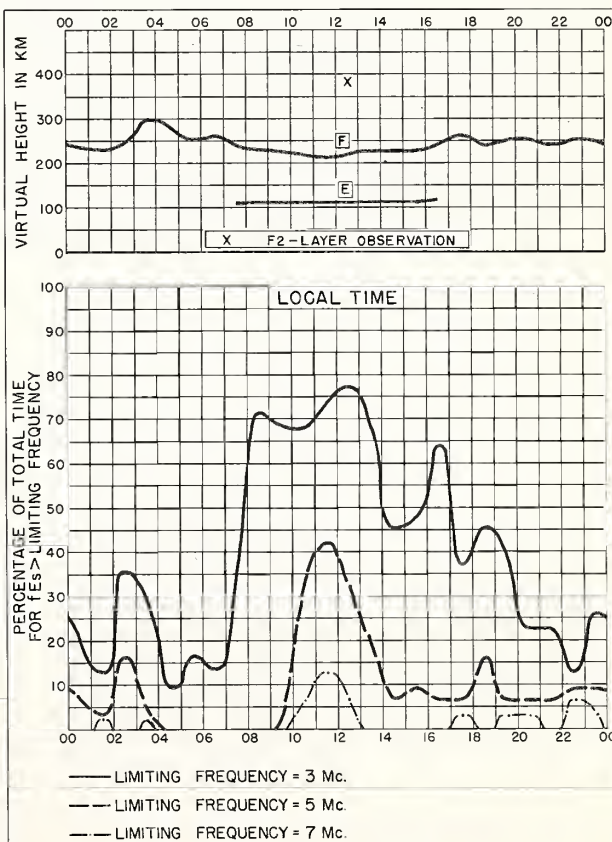


Fig. 76. PUERTO RICO, W.I.

JANUARY 1958

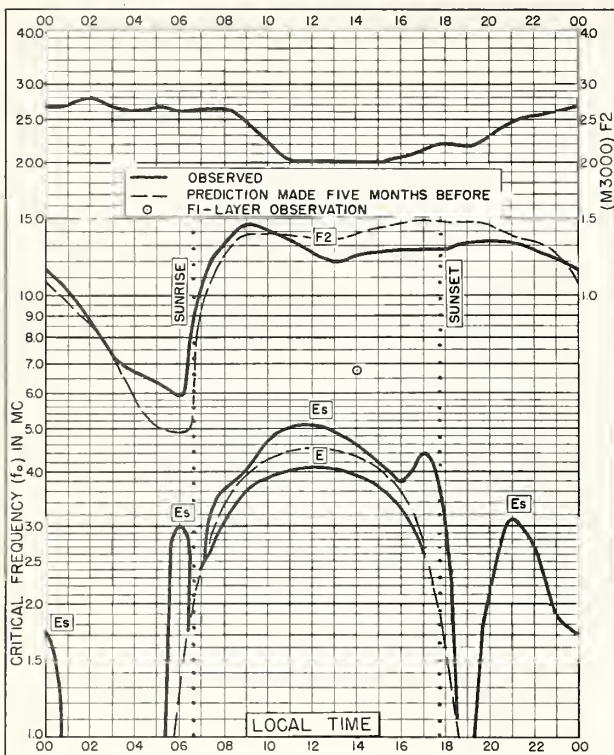
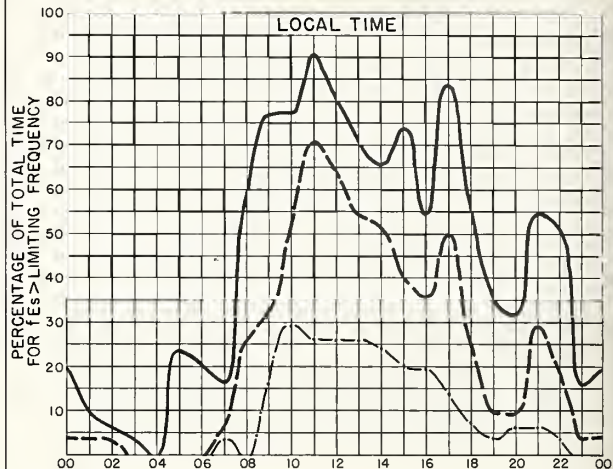
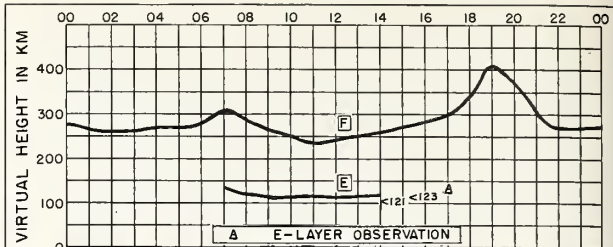


Fig. 77. BAGUIO, P.I.  
16.4°N, 120.6°E

JANUARY 1958

Commerce-Standard-Enrich, Colo.

NBS 503



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc.  
- . - LIMITING FREQUENCY = 7 Mc.

Fig. 78. BAGUIO, P.I.

JANUARY 1958

Commerce-Standard-Enrich, Colo.

NBS 490

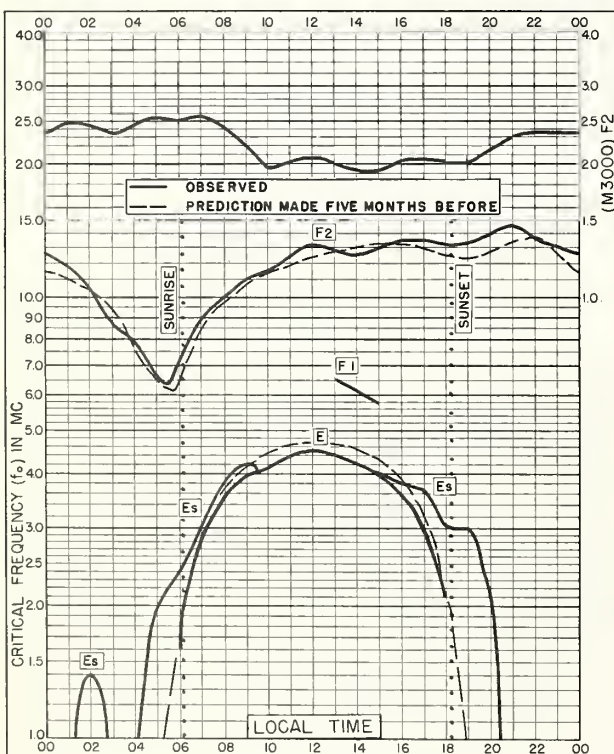
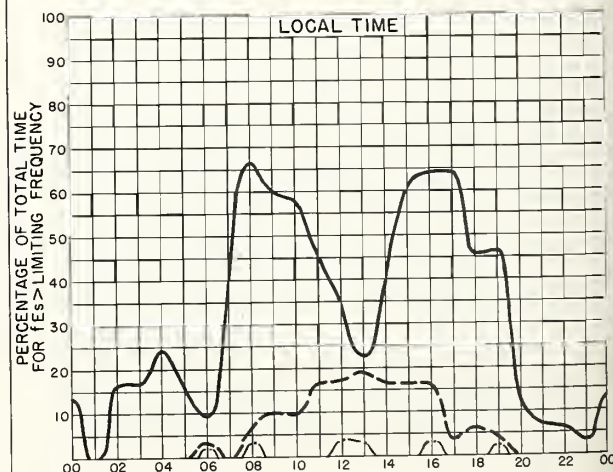
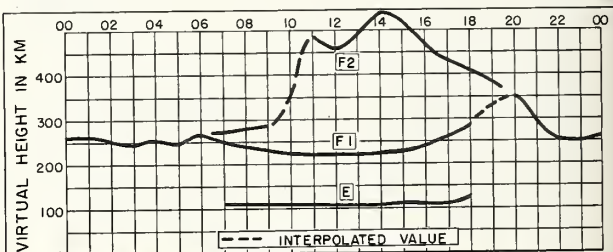


Fig. 79. LEOPOLDVILLE, BELGIAN CONGO  
4.4°S, 15.2°E

JANUARY 1958

Commerce-Standard-Enrich, Colo.

NBS 503



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc.  
- . - LIMITING FREQUENCY = 7 Mc.

Fig. 80. LEOPOLDVILLE, BELGIAN CONGO

JANUARY 1958

Commerce-Standard-Enrich, Colo.

NBS 490



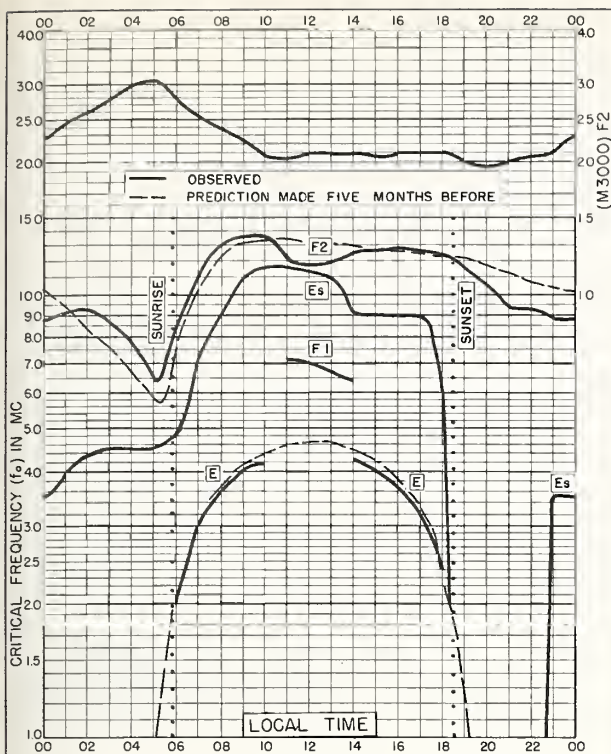


Fig. 81. HUANCAYO, PERU  
12.0°S, 75.3°W

JANUARY 1958

Comunicaciones Radioeléctricas, Colombia.

NBS 503

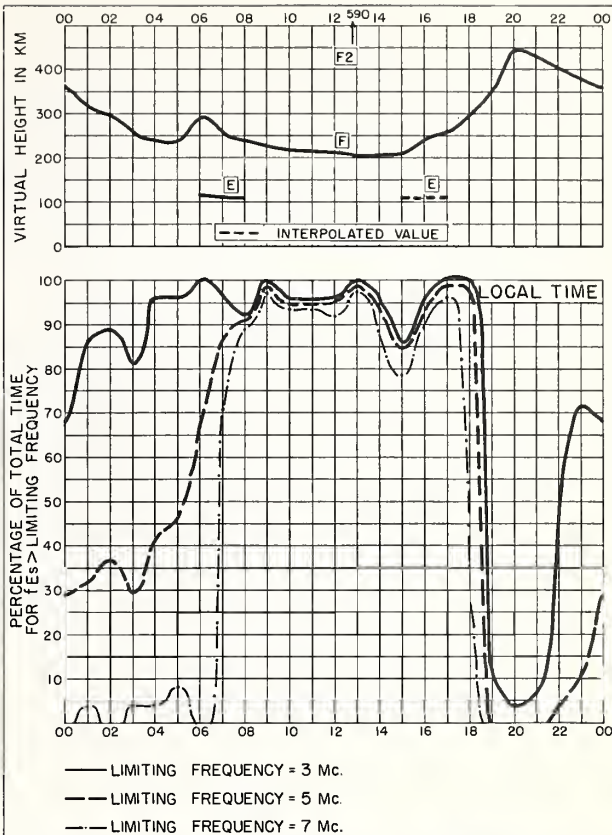


Fig. 82. HUANCAYO, PERU

JANUARY 1958

NBS 490

Comunicaciones Radioeléctricas, Colombia.

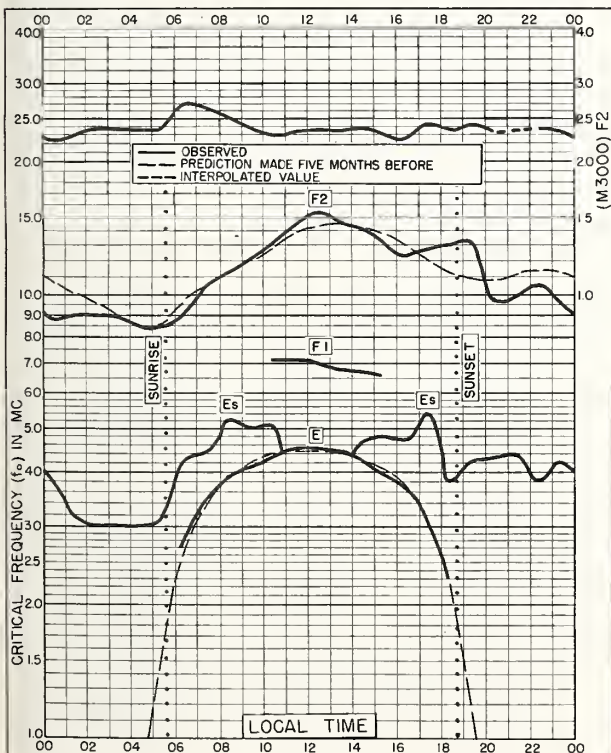


Fig. 83. RAROTONGA I.  
21.2°S, 159.8°W

JANUARY 1958

Comunicaciones Radioeléctricas, Colombia.

NBS 503

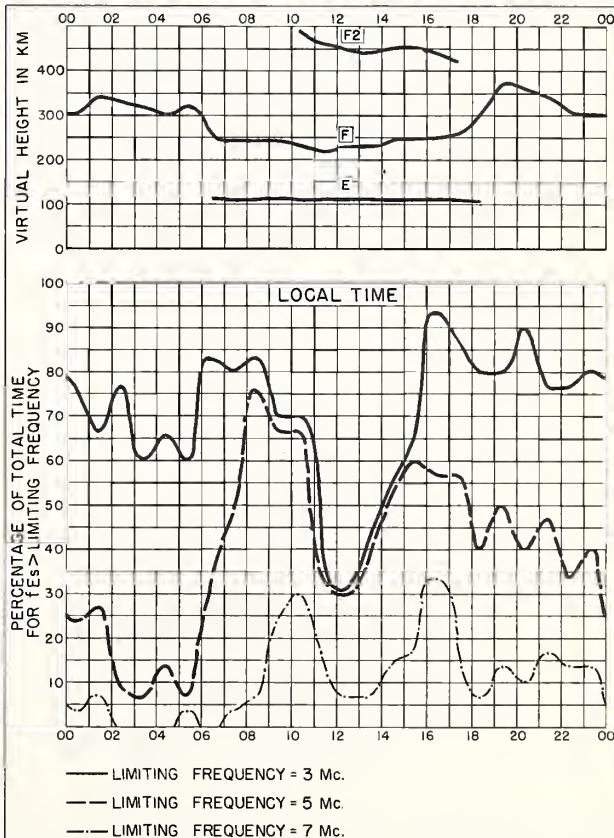
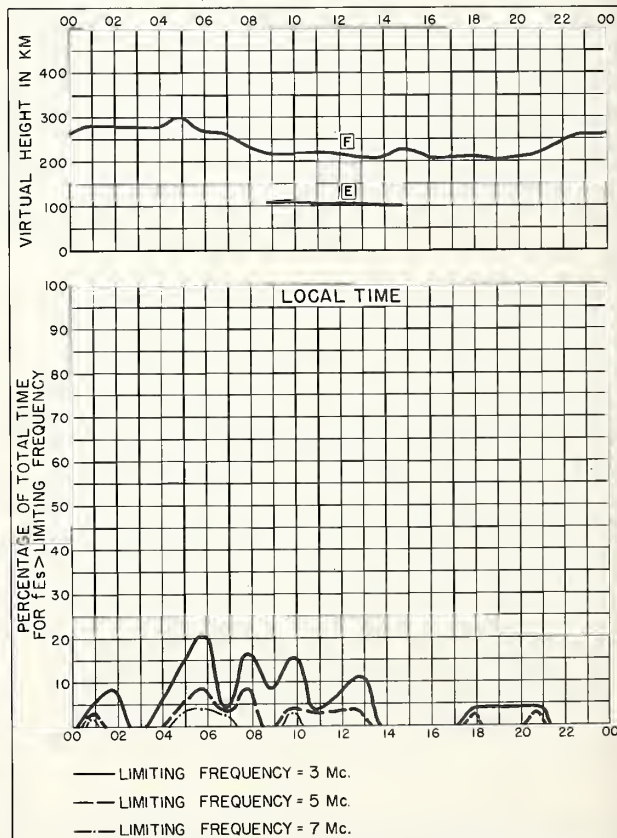
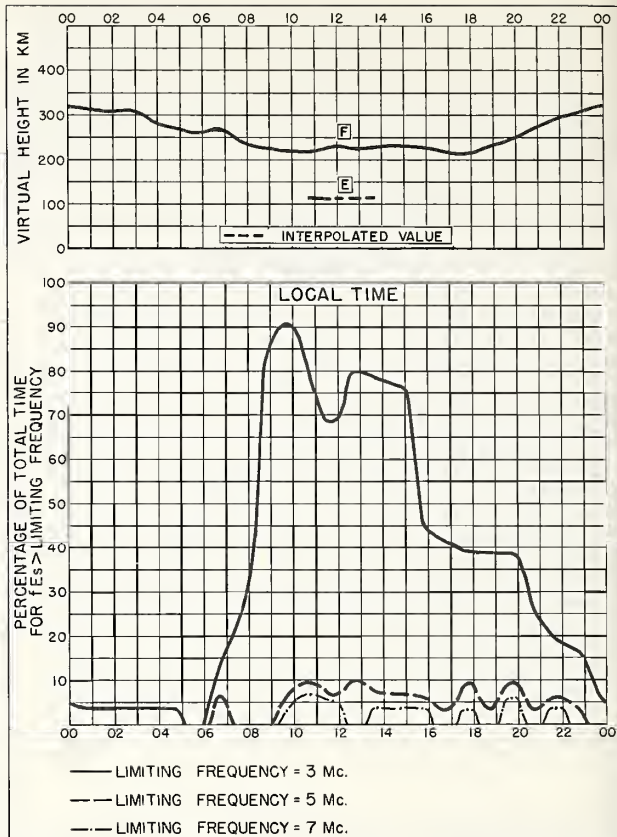
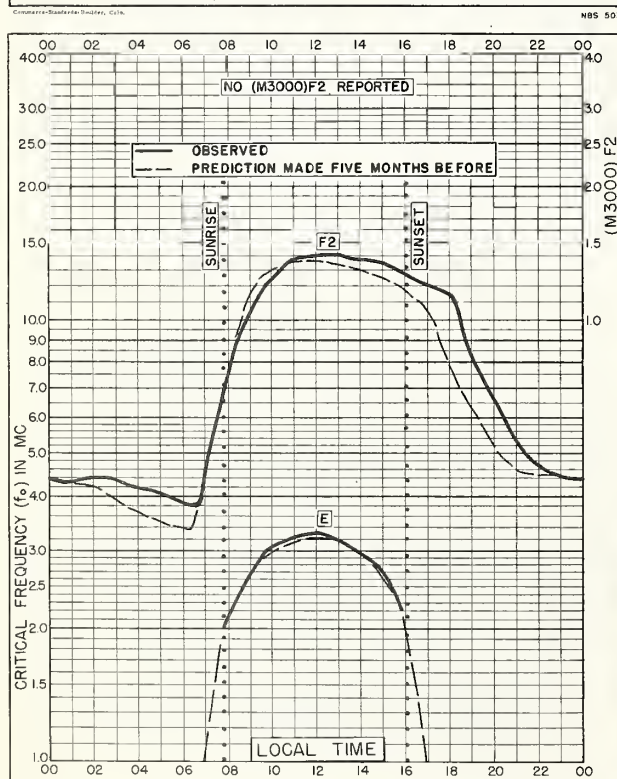
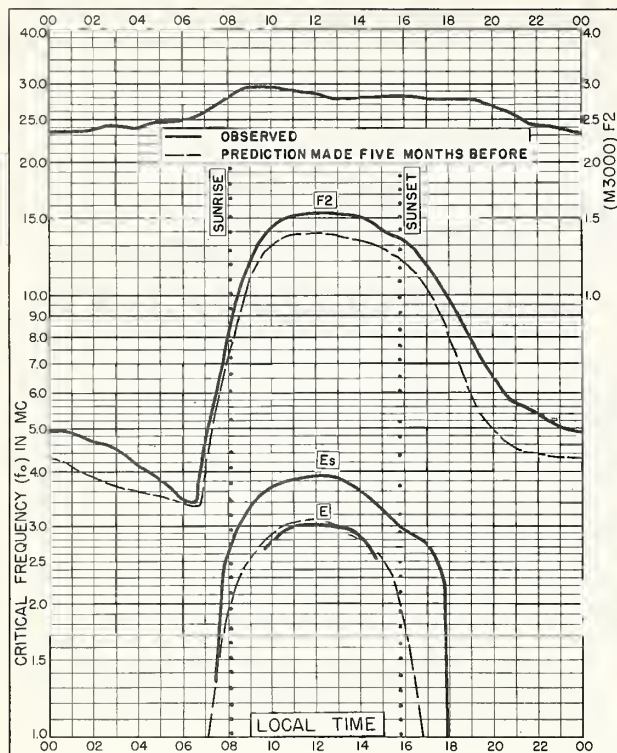


Fig. 84. RAROTONGA I.

JANUARY 1958

Comunicaciones Radioeléctricas, Colombia.

NBS 490





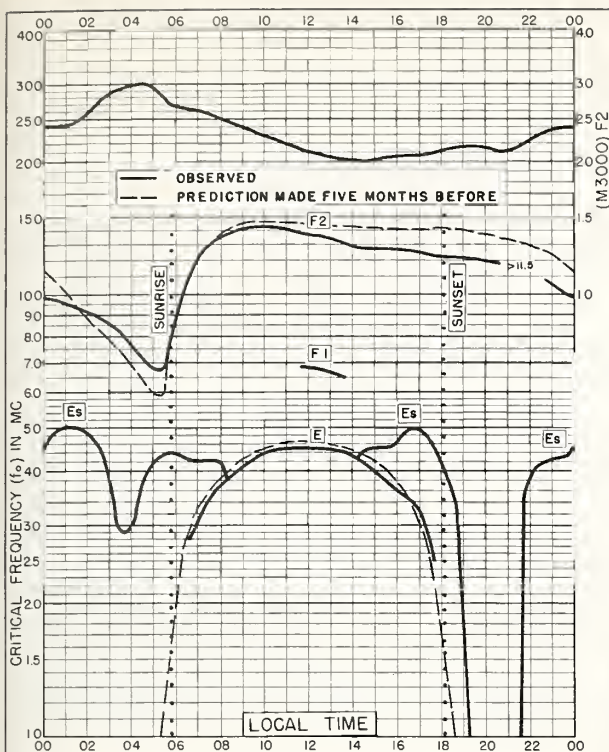
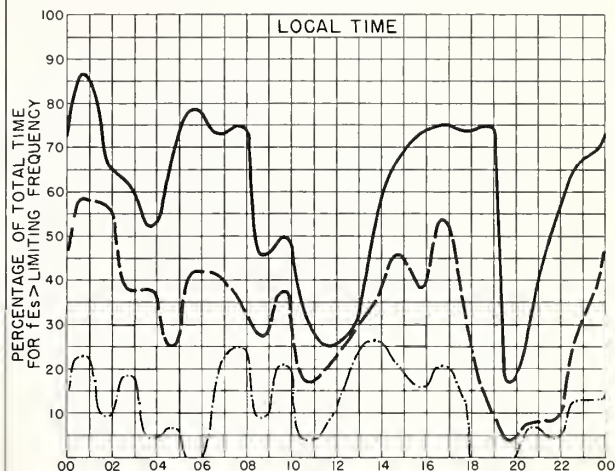
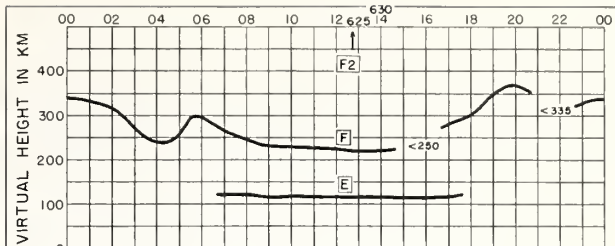


Fig. 89. CHICLAYO, PERU  
6.8°S, 79.8°W

DECEMBER 1957



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc.  
- · - · - LIMITING FREQUENCY = 7 Mc.

Fig. 90. CHICLAYO, PERU

DECEMBER 1957

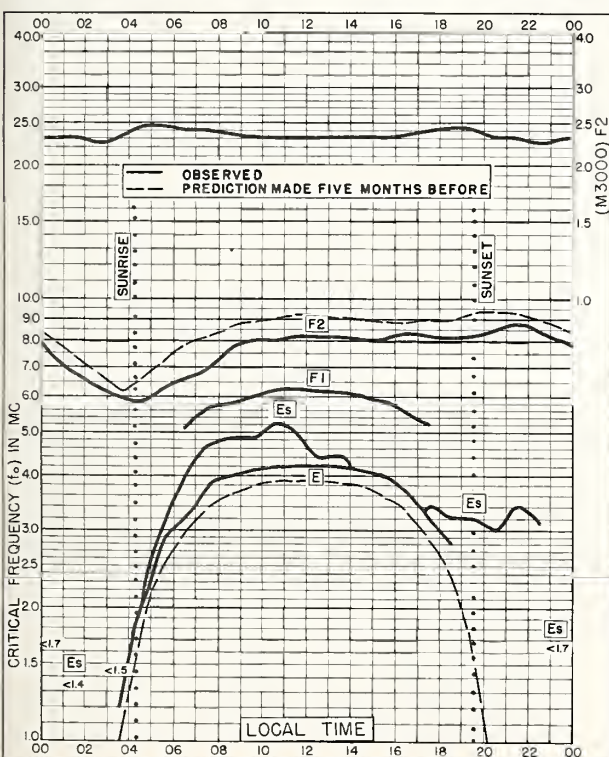
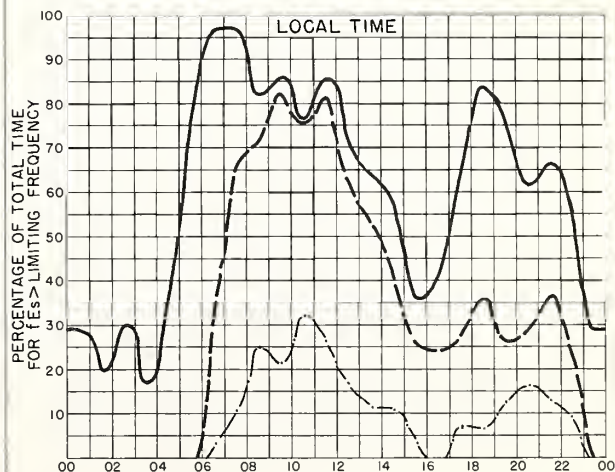
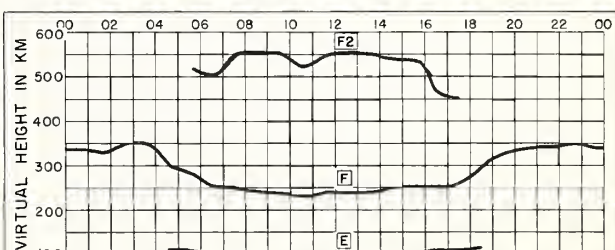


Fig. 91. CHRISTCHURCH, NEW ZEALAND  
43.6°S, 172.8°E

DECEMBER 1957



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc.  
- · - · - LIMITING FREQUENCY = 7 Mc.

Fig. 92. CHRISTCHURCH, NEW ZEALAND

DECEMBER 1957



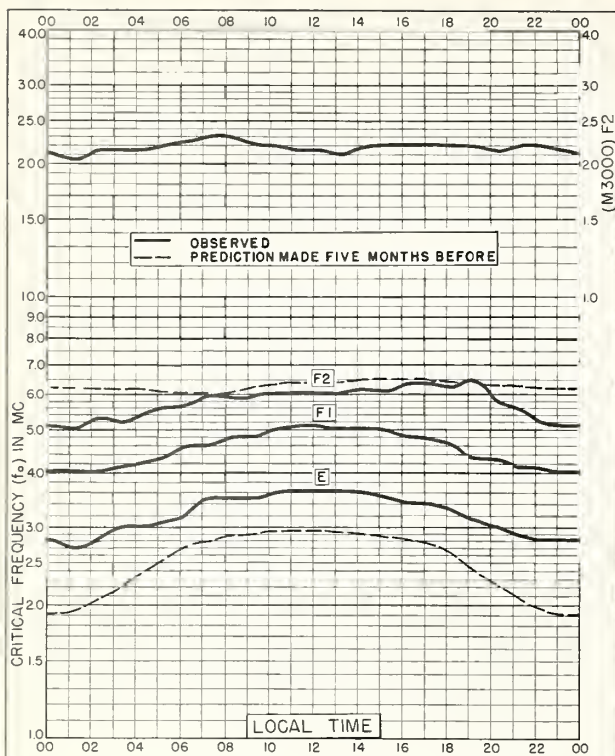


Fig. 93. SCOTT BASE  
77.8°S, 166.8°E  
DECEMBER 1957

NBS 503

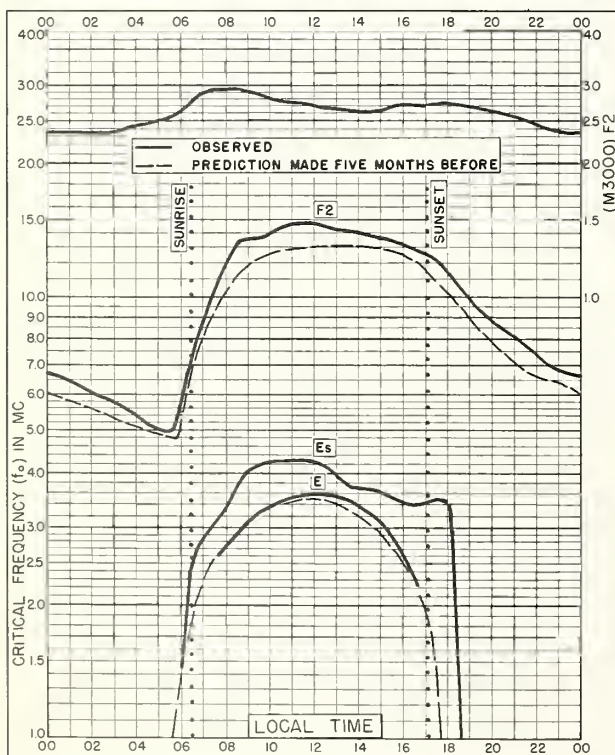


Fig. 95. LINDAU/HARZ, GERMANY  
51.6°N, 10.1°E  
OCTOBER 1957

NBS 503

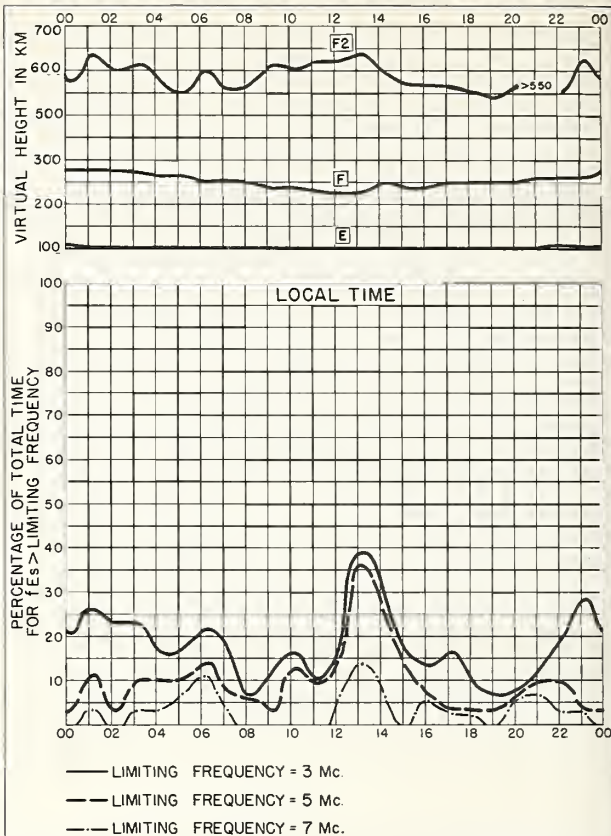


Fig. 94. SCOTT BASE  
DECEMBER 1957

NBS 490

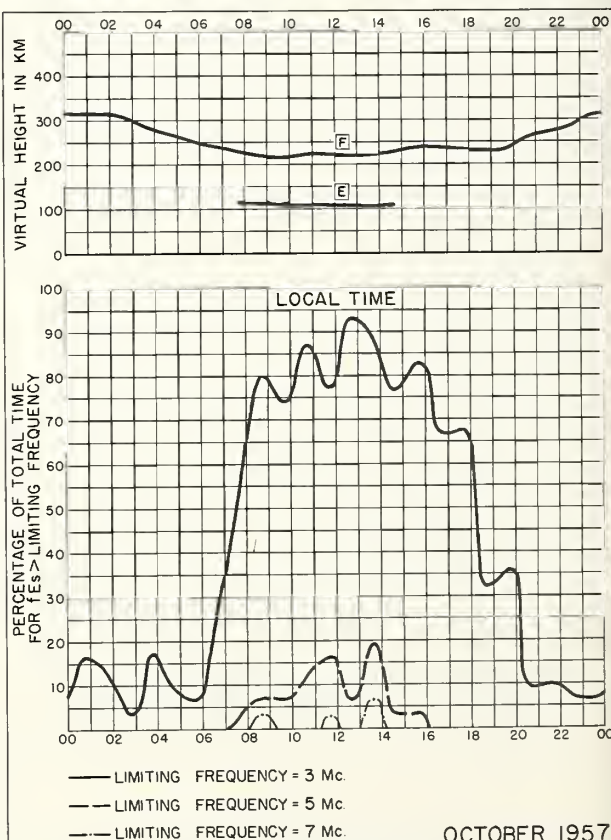


Fig. 96. LINDAU/HARZ, GERMANY  
OCTOBER 1957

NBS 490

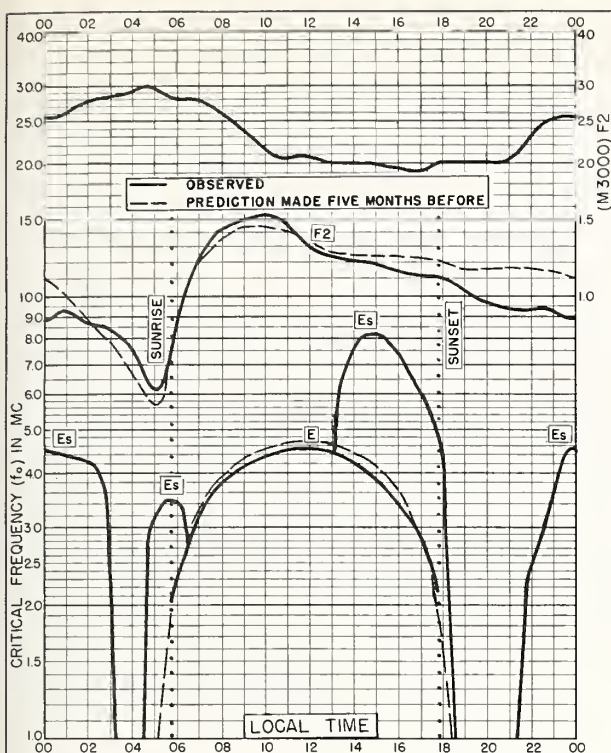


Fig. 97. CHIMBOTE, PERU  
9.1°S, 78.6°W

OCTOBER 1957

Continued Standard Ionogram, C-100

NBS 503

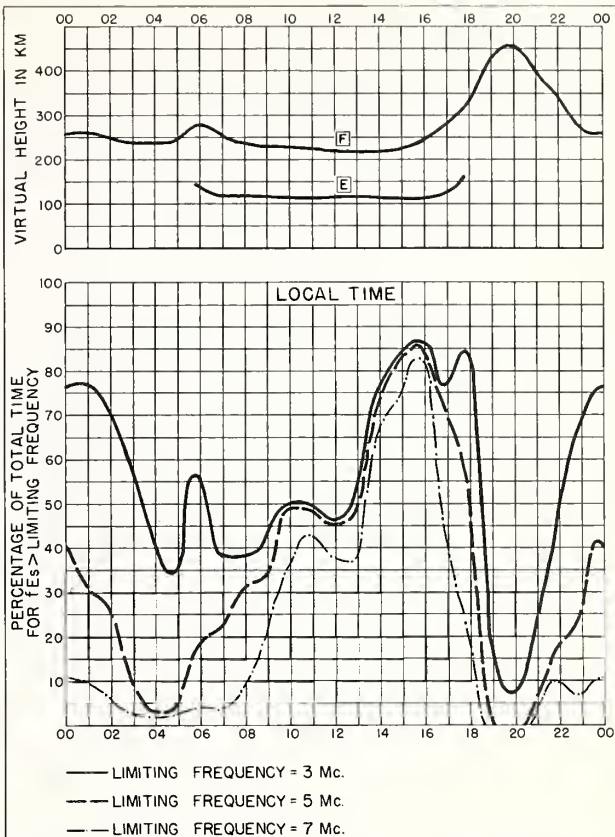


Fig. 98. CHIMBOTE, PERU

OCTOBER 1957

Continued Standard Ionogram, C-100

NBS 490

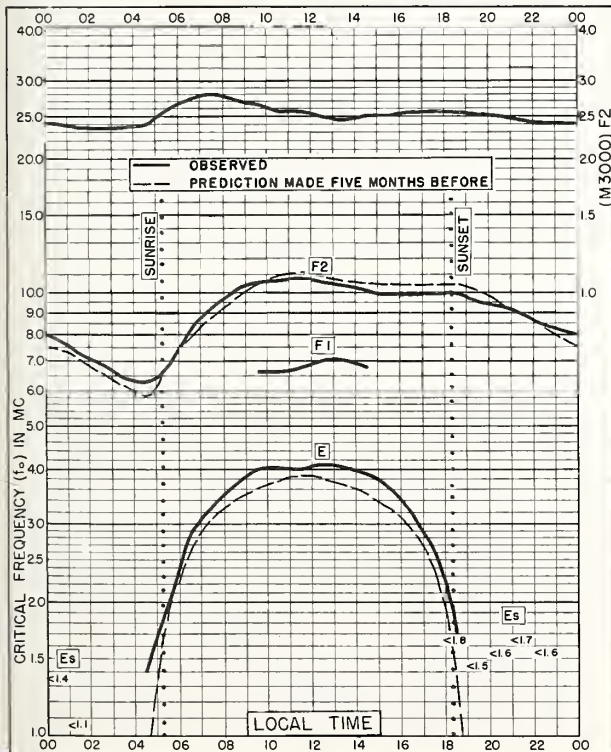


Fig. 99. CHRISTCHURCH, NEW ZEALAND  
43.6°S, 172.8°E

OCTOBER 1957

Continued Standard Ionogram, C-100

NBS 503

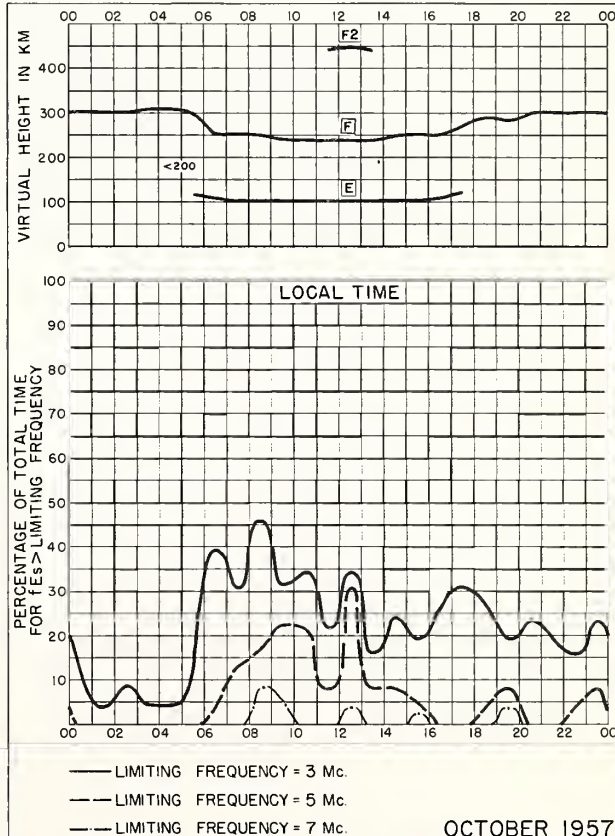


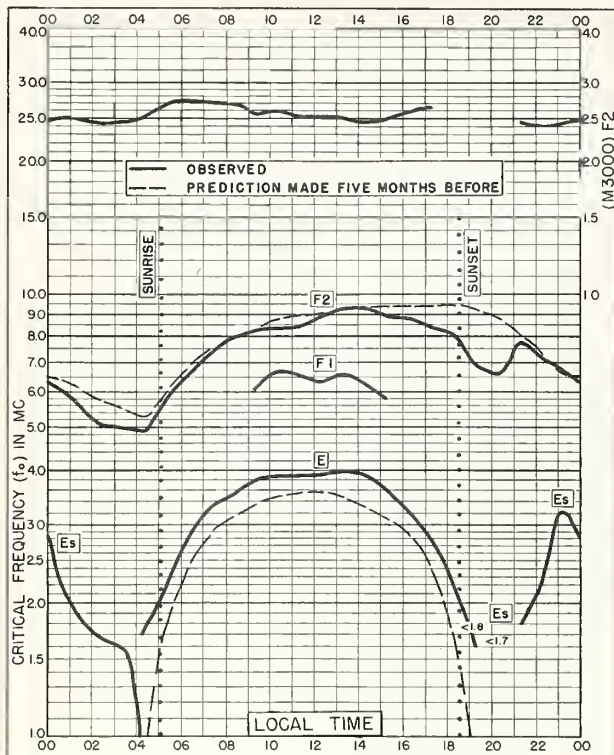
Fig. 100. CHRISTCHURCH, NEW ZEALAND

OCTOBER 1957

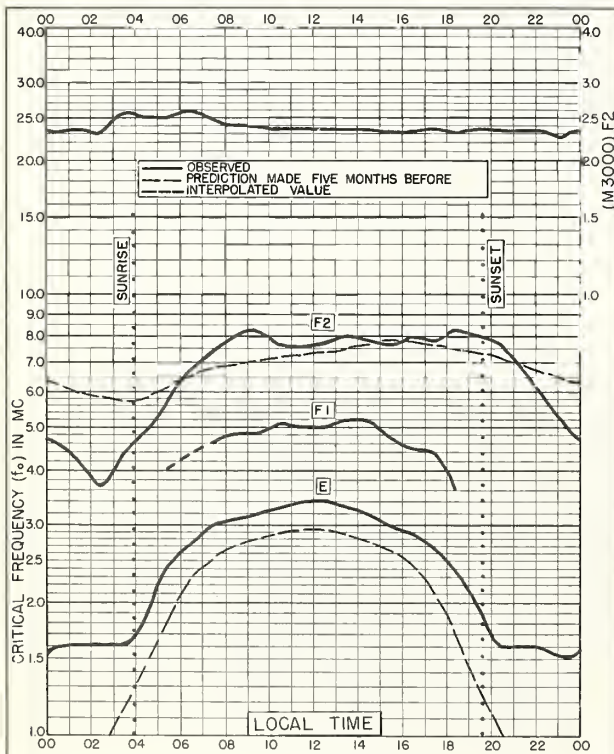
Continued Standard Ionogram, C-100

NBS 490

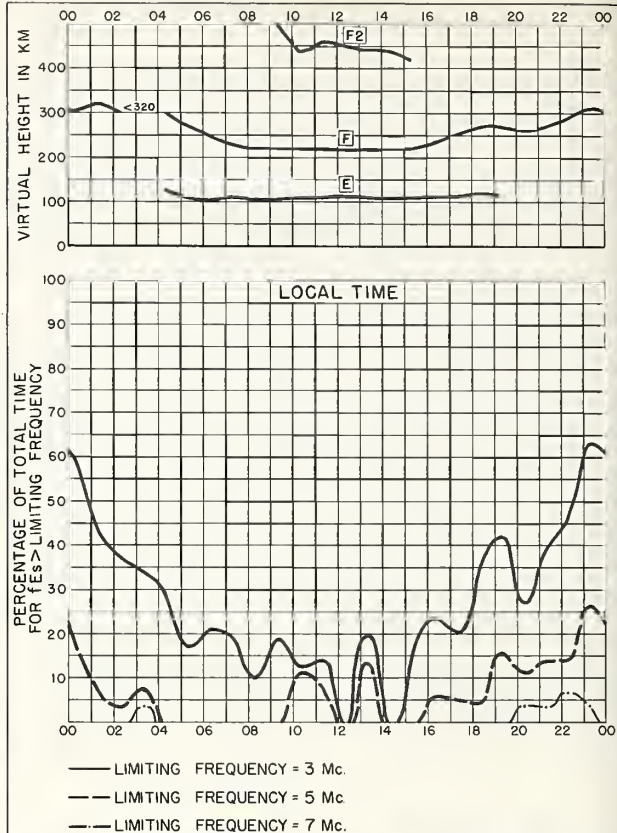




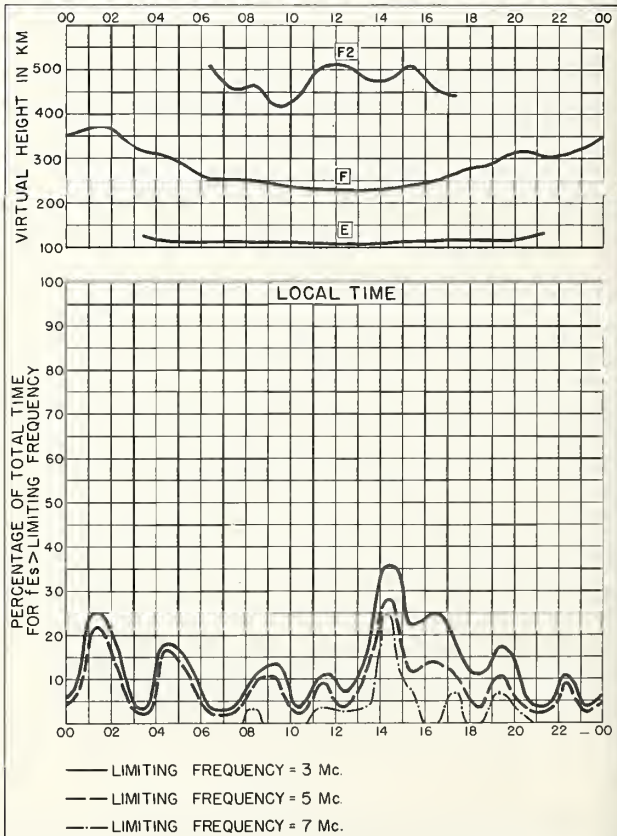
NBS 503



NBS 503



NBS 490



NBS 490



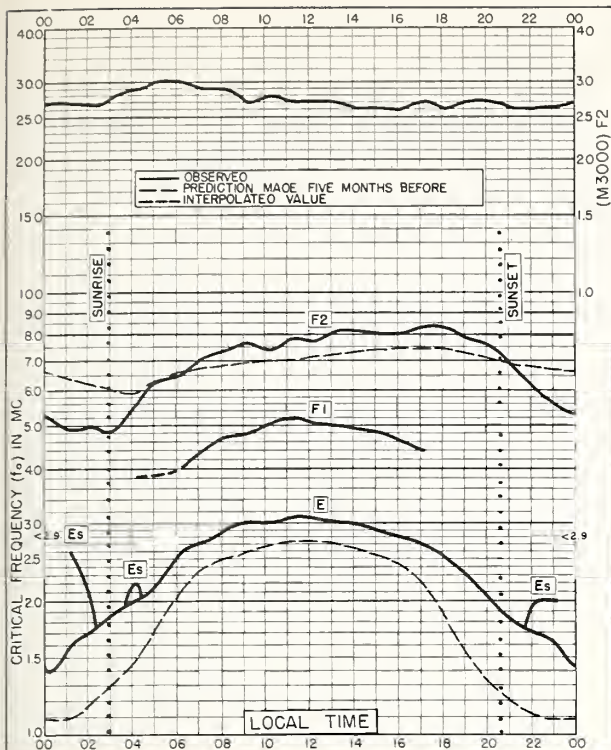


Fig. 105. SCOTT BASE  
77.8°S, 166.8°E  
OCTOBER 1957

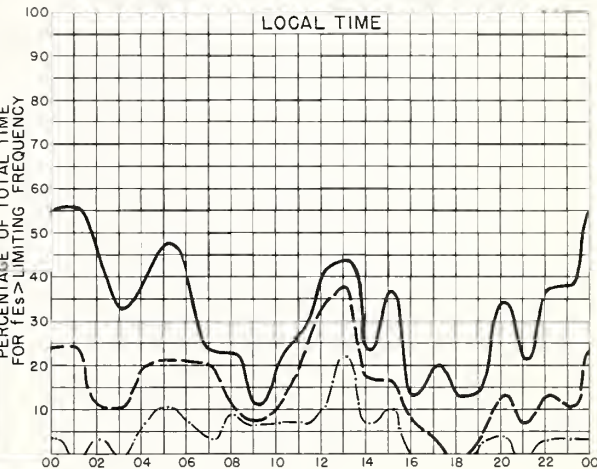
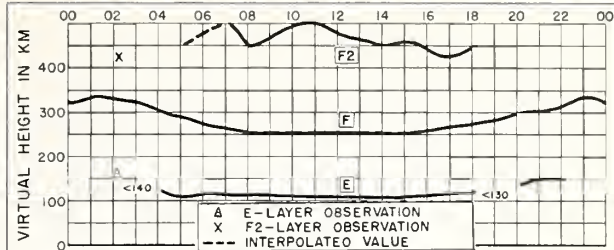


Fig. 106. SCOTT BASE  
OCTOBER 1957

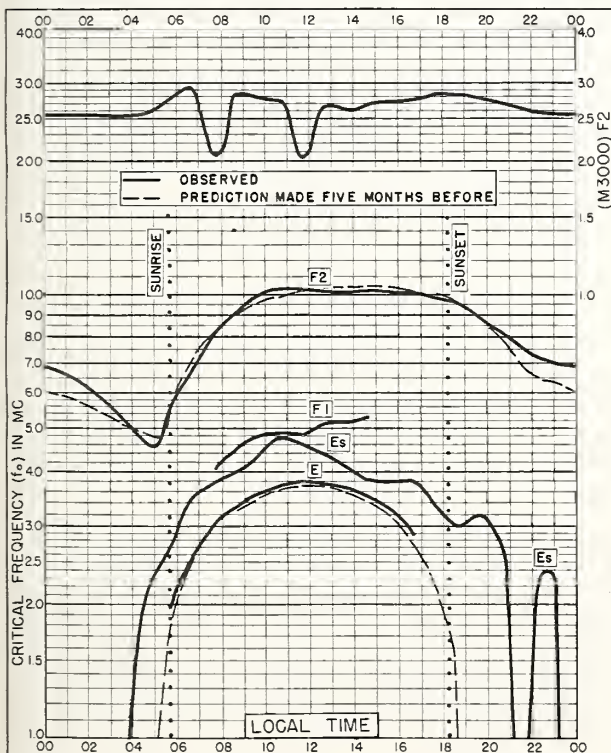


Fig. 107. LINDAU/HARZ, GERMANY  
51.6°N, 10.1°E  
SEPTEMBER 1957

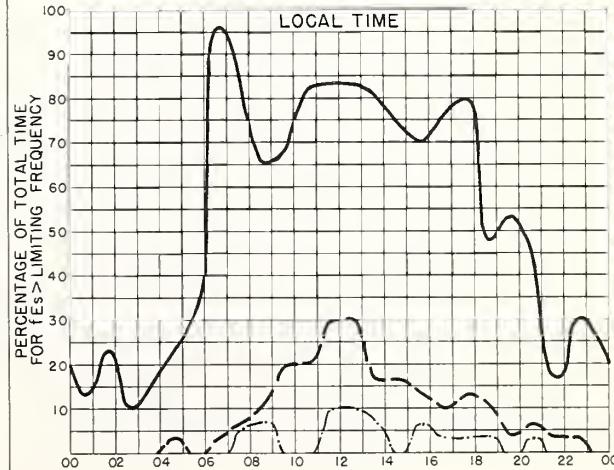
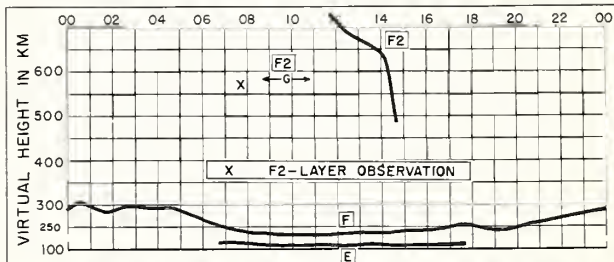
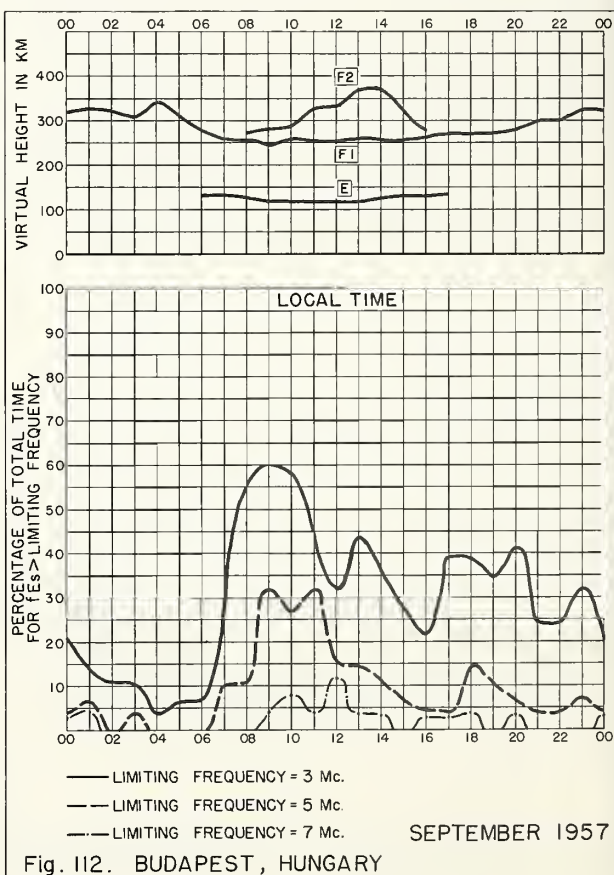
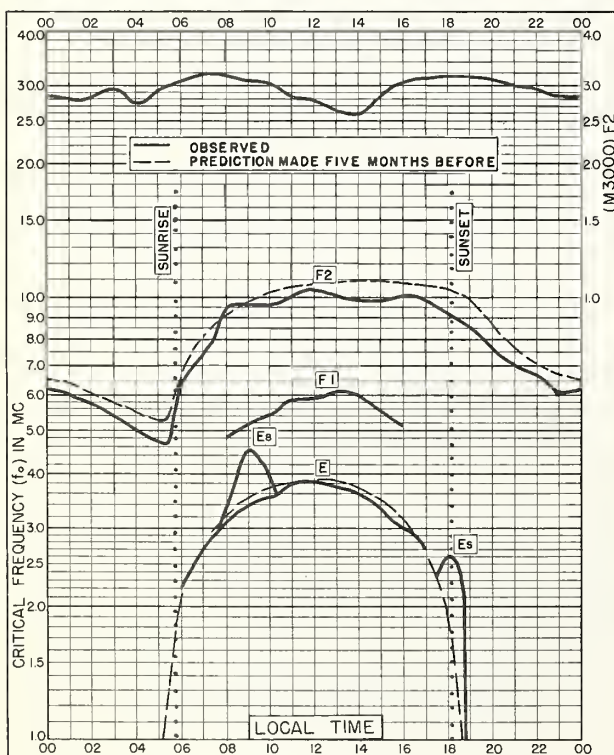
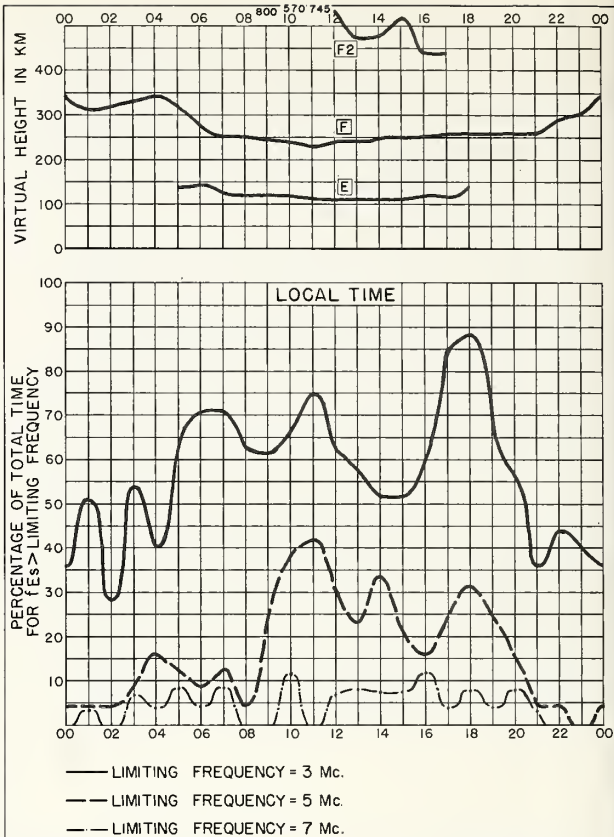
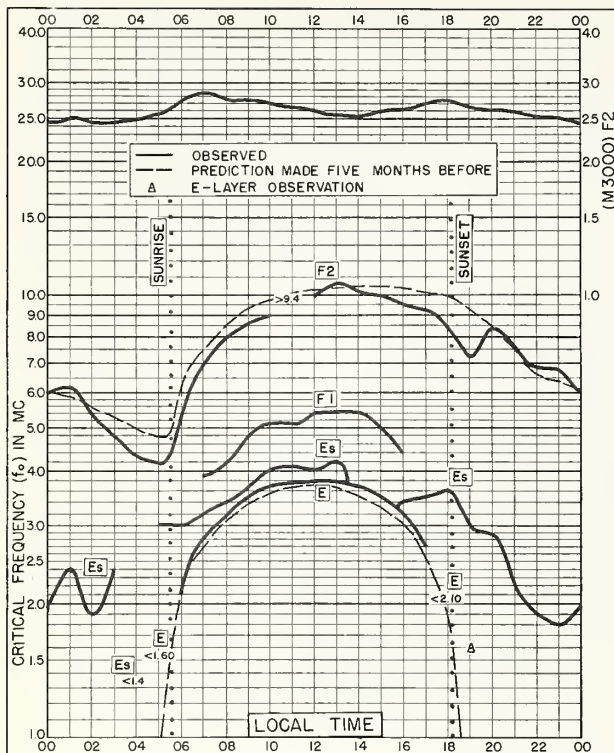


Fig. 108. LINDAU/HARZ, GERMANY  
SEPTEMBER 1957





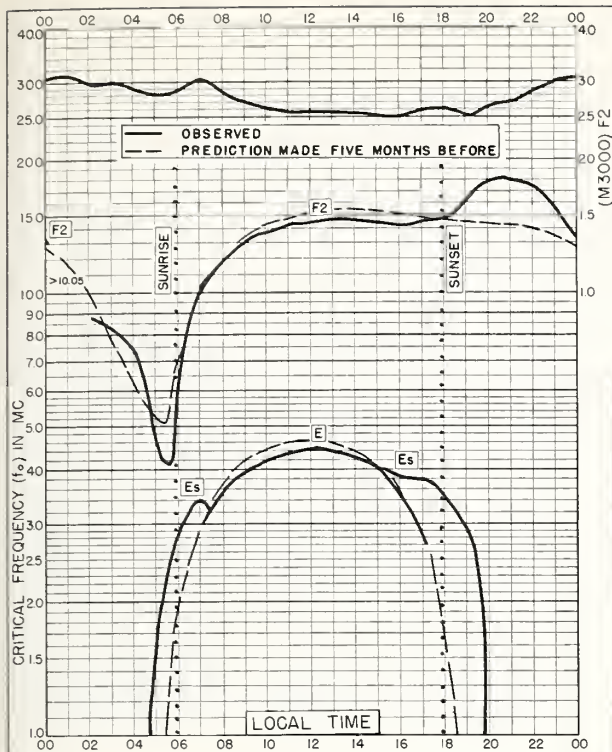


Fig. 113. BOGOTA, COLOMBIA  
4.5°N, 74.2°W SEPTEMBER 1957

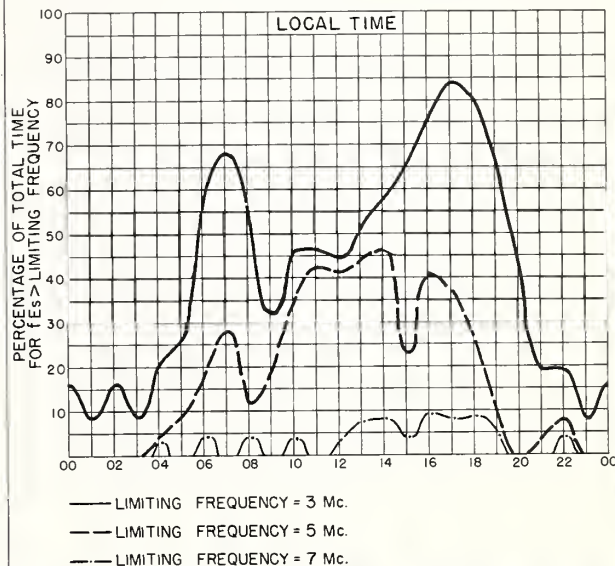
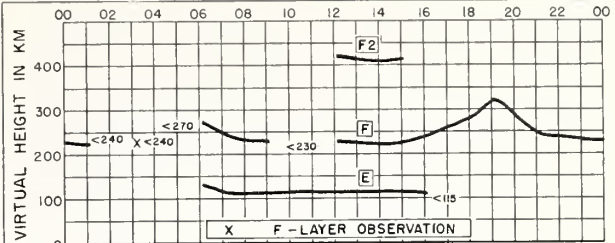


Fig. 114. BOGOTA, COLOMBIA SEPTEMBER 1957

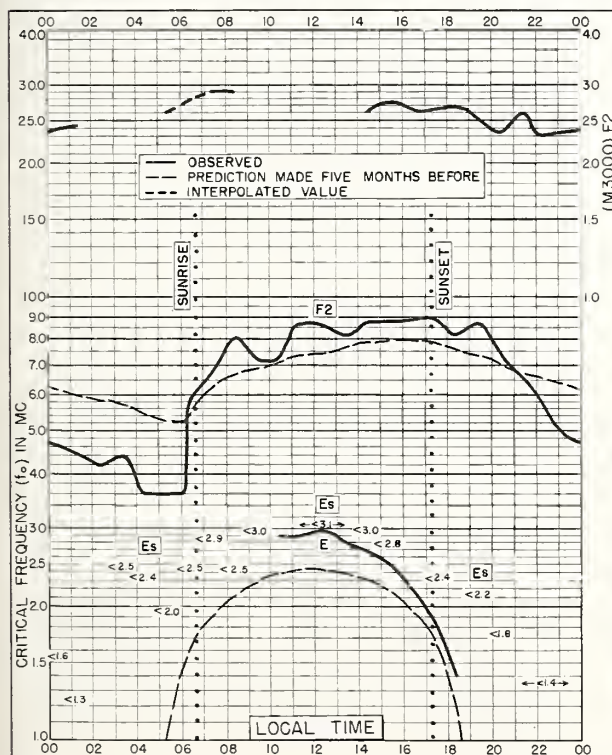


Fig. 115. CAPE HALLETT  
72.3°S, 170.3°E SEPTEMBER 1957

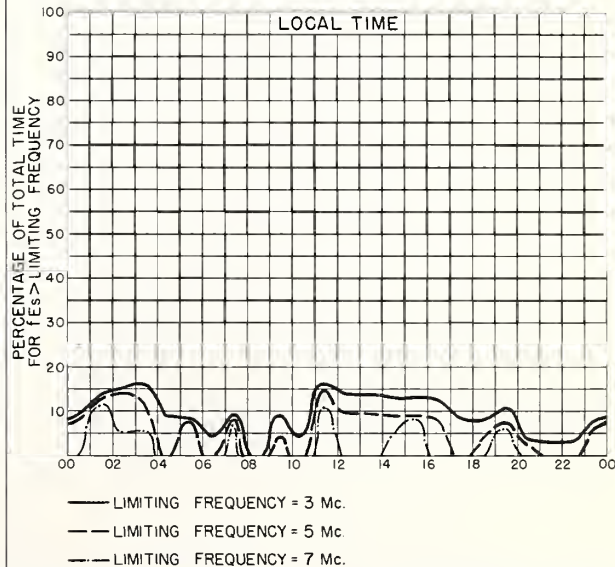
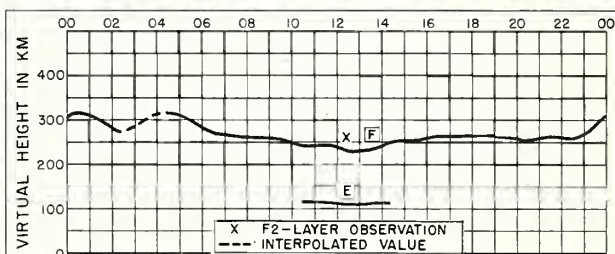


Fig. 116. CAPE HALLETT SEPTEMBER 1957



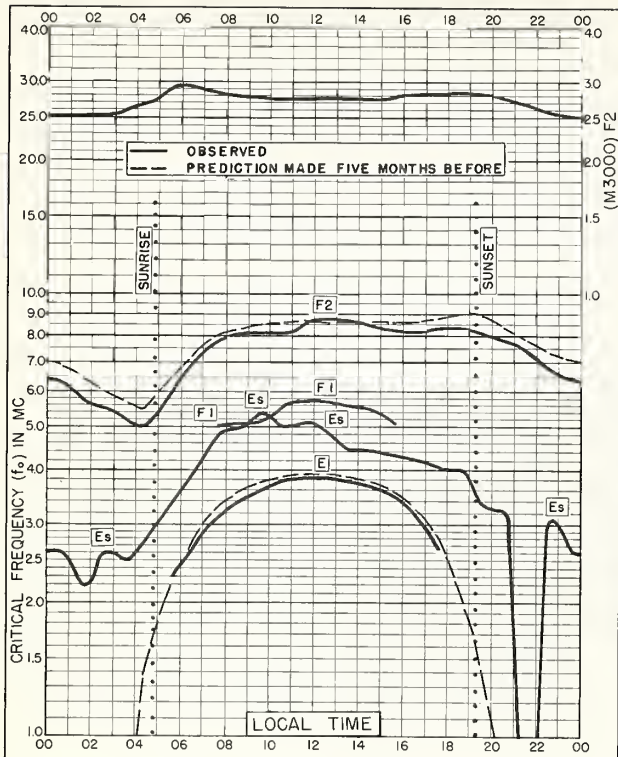


Fig. 117. LINDAU/HARZ, GERMANY  
51.6°N, 10.1°E

AUGUST 1957

NBS 503

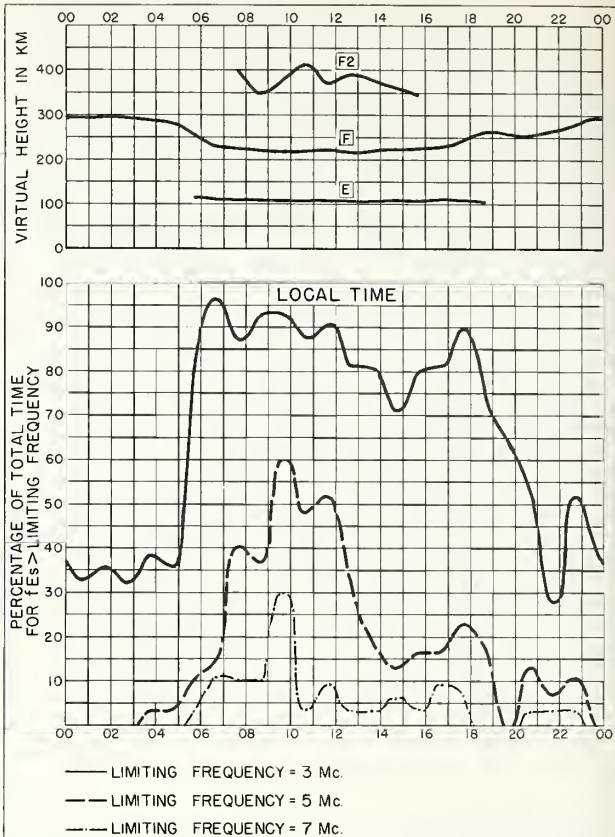


Fig. 118. LINDAU/HARZ, GERMANY AUGUST 1957

NBS 450

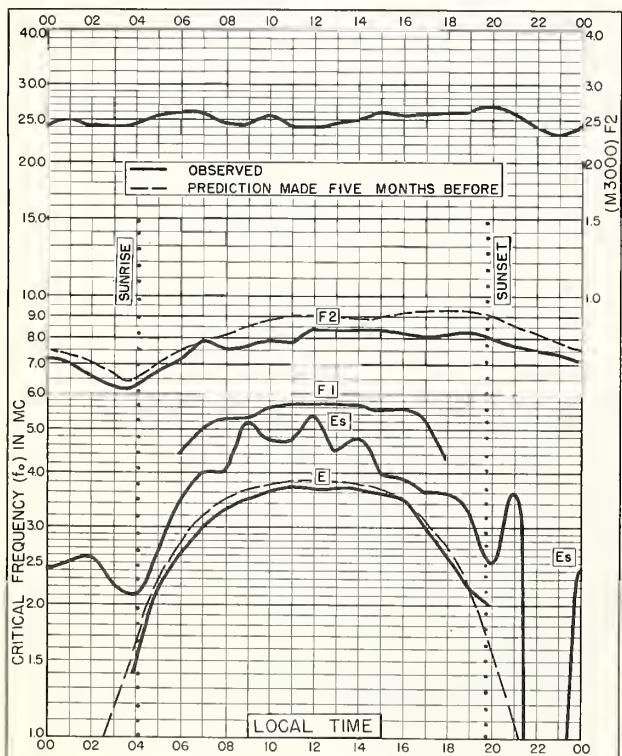


Fig. 119. JULIUSRUH/RÜGEN, GERMANY  
54.6°N, 13.4°E

MAY 1957

NBS 503

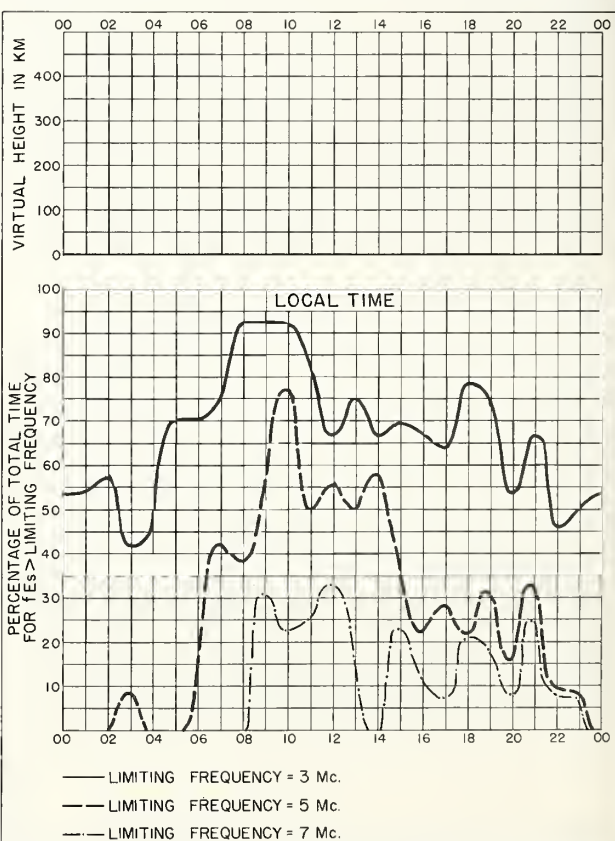


Fig. 120. JULIUSRUH/RÜGEN, GERMANY MAY 1957

NBS 450

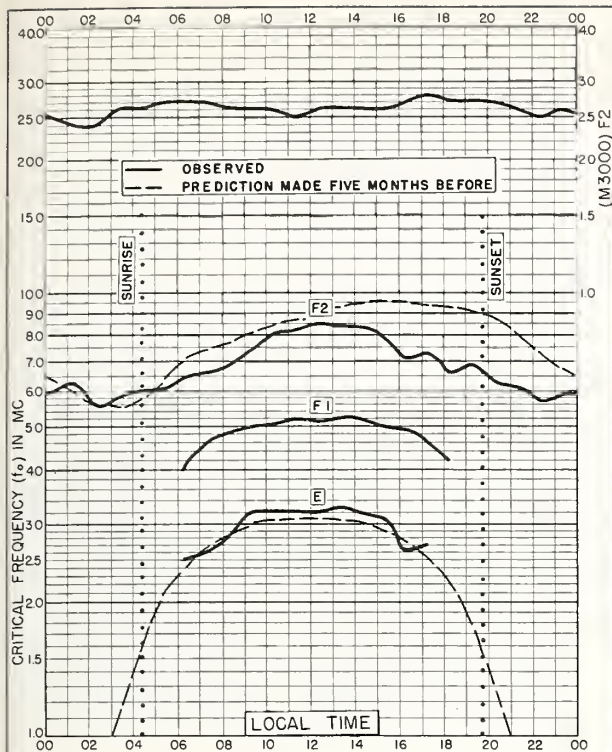


Fig. 121. MURMANSK, U.S.S.R.  
69.0°N, 33.1°E

APRIL 1957

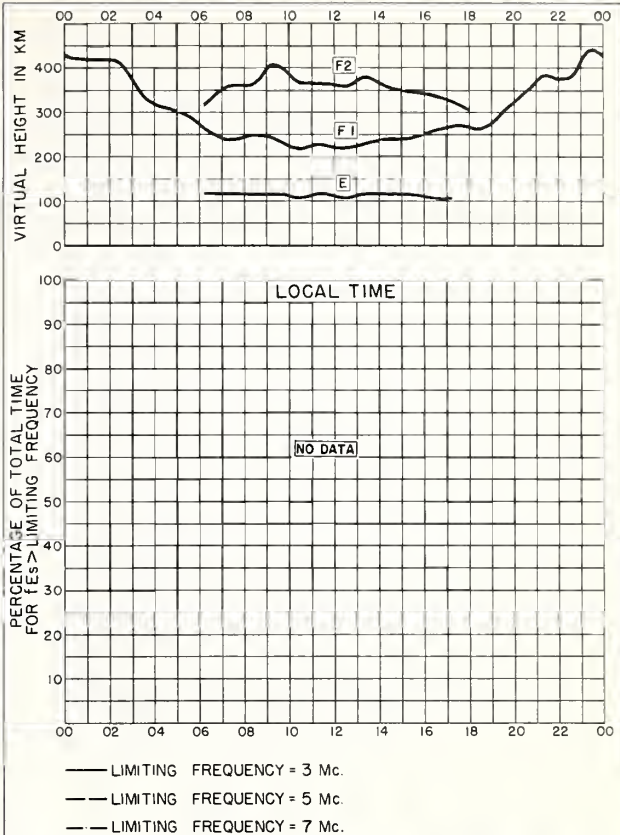


Fig. 122. MURMANSK, U.S.S.R.

APRIL 1957

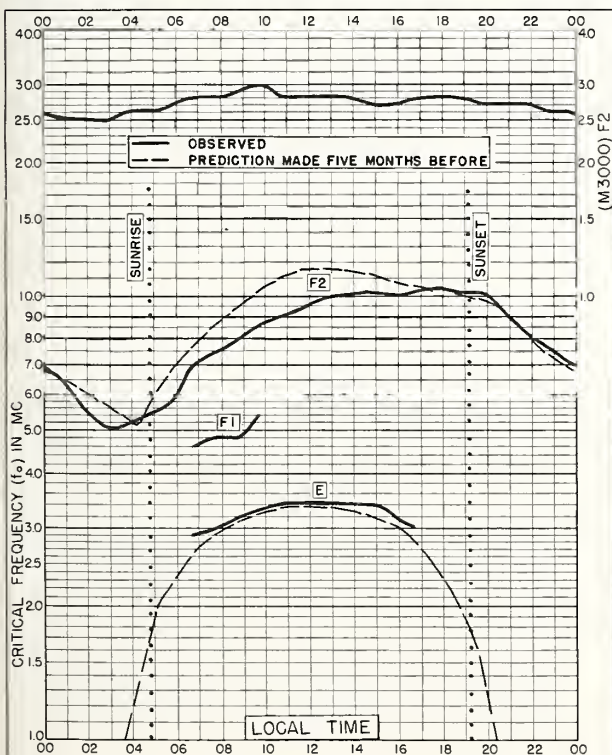


Fig. 123. YAKUTSK, U.S.S.R.  
62.0°N, 129.7°E

APRIL 1957

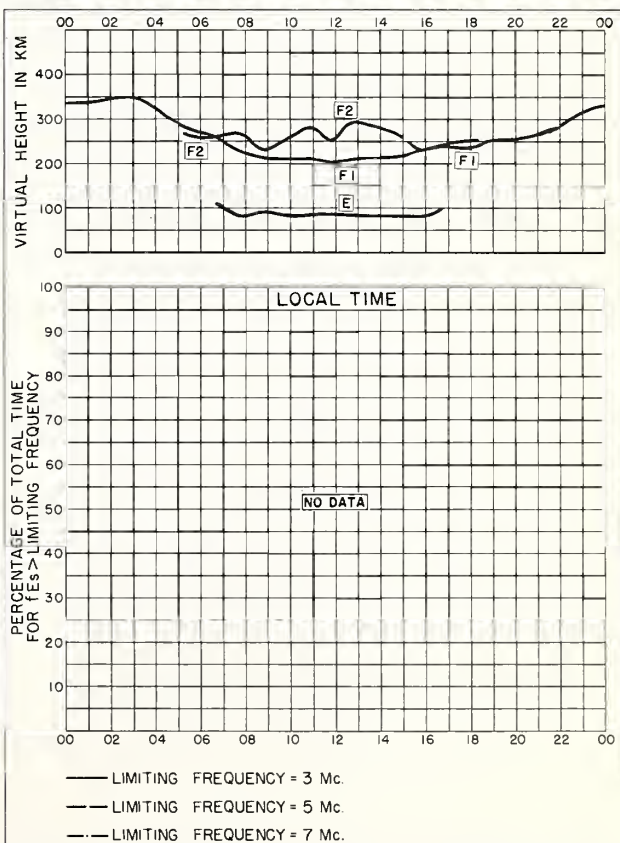


Fig. 124. YAKUTSK, U.S.S.R.

APRIL 1957



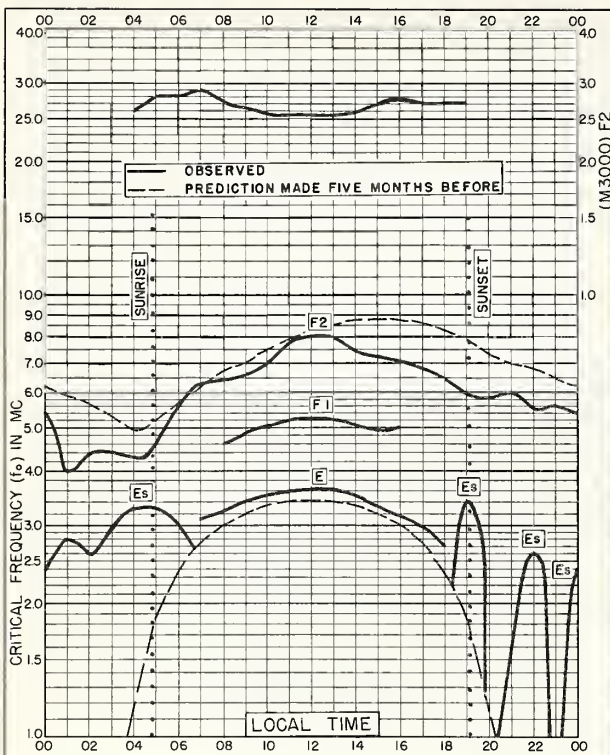


Fig. 125. NARSARSSUAK, GREENLAND  
61.2°N, 45.4°W

APRIL 1957

NBS 503

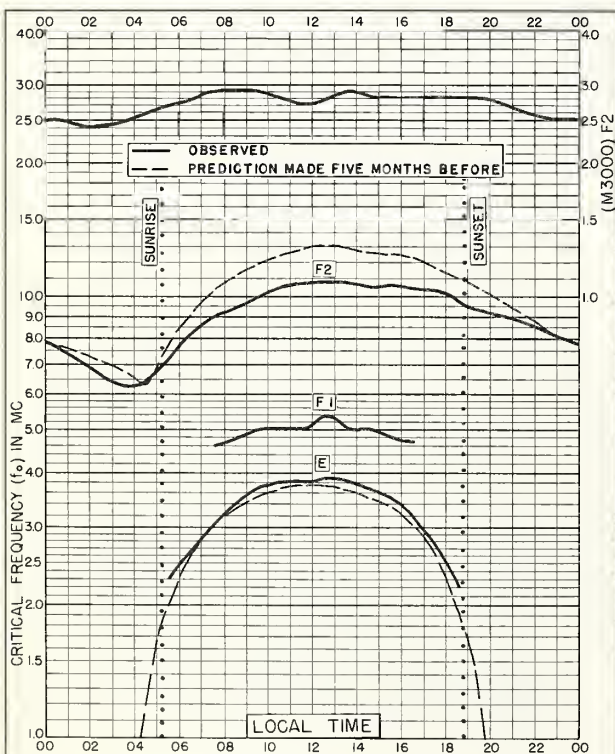
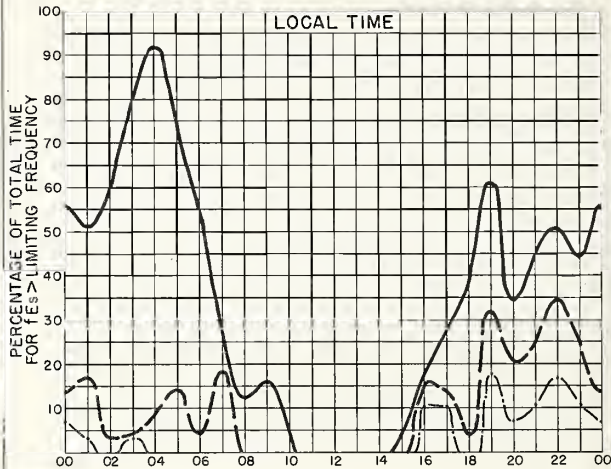
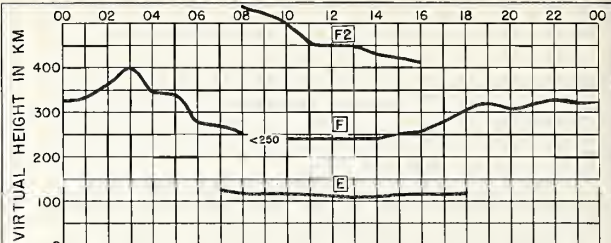


Fig. 127. CHITA, U. S. S. R.  
52.0°N, 113.3°E

APRIL 1957

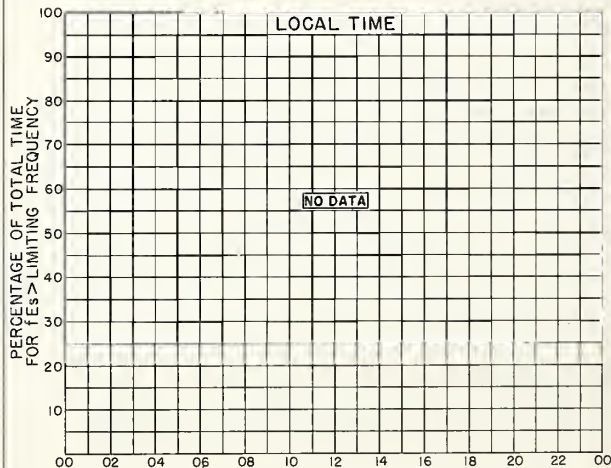
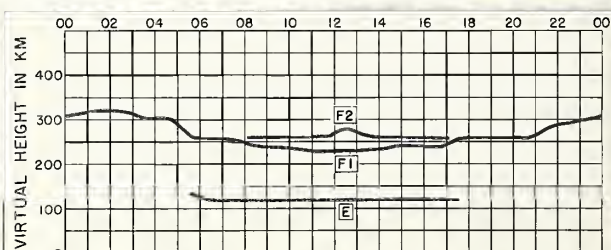
NBS 503



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc.  
... LIMITING FREQUENCY = 7 Mc.

Fig. 126. NARSARSSUAK, GREENLAND APRIL 1957

NBS 490



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc.  
... LIMITING FREQUENCY = 7 Mc.

Fig. 128. CHITA, U. S. S. R.

APRIL 1957

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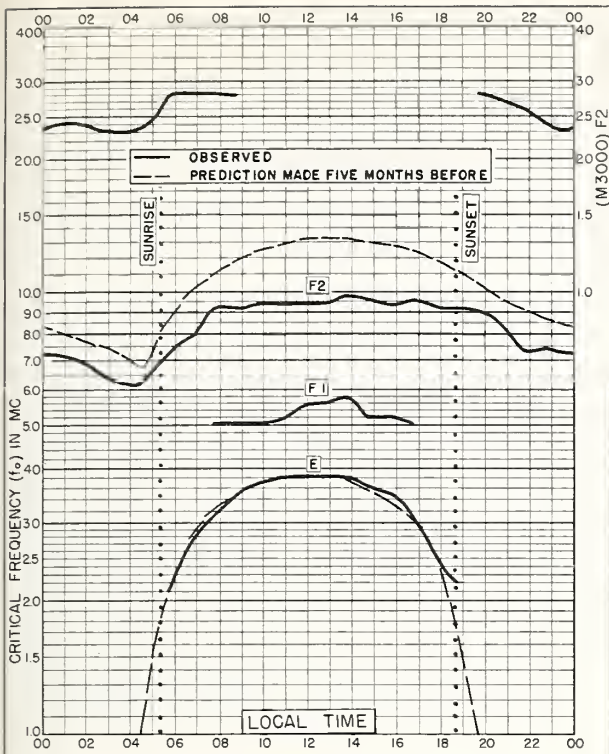


Fig. 129. ROSTOV-ON-DON, U.S.S.R.  
47.2°N, 39.7°E

APRIL 1957

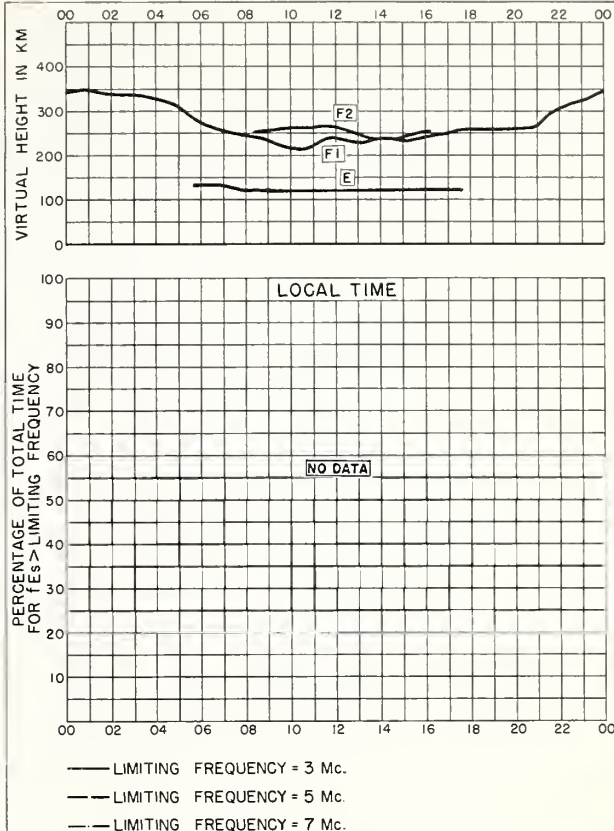


Fig. 130. ROSTOV-ON-DON, U.S.S.R. APRIL 1957

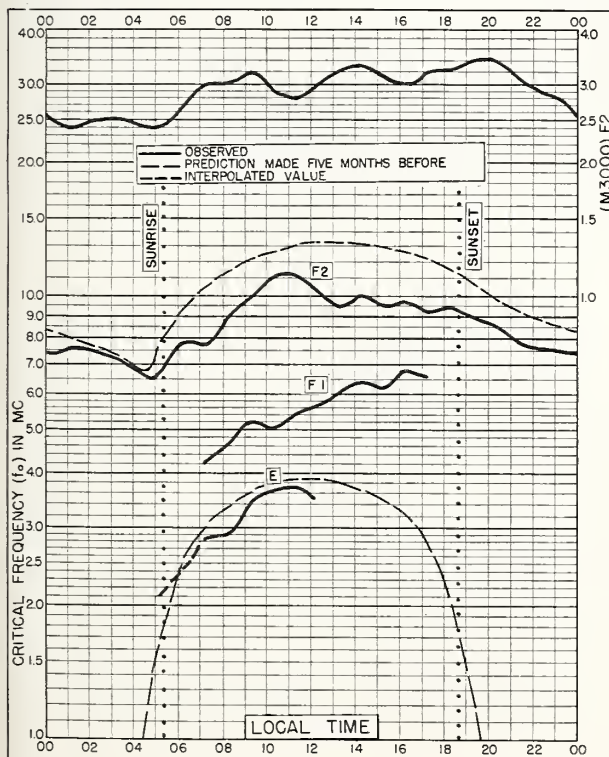


Fig. 131. YUZHNO-SAKHALINSK, U.S.S.R.  
47.0°N, 143.0°E

APRIL 1957

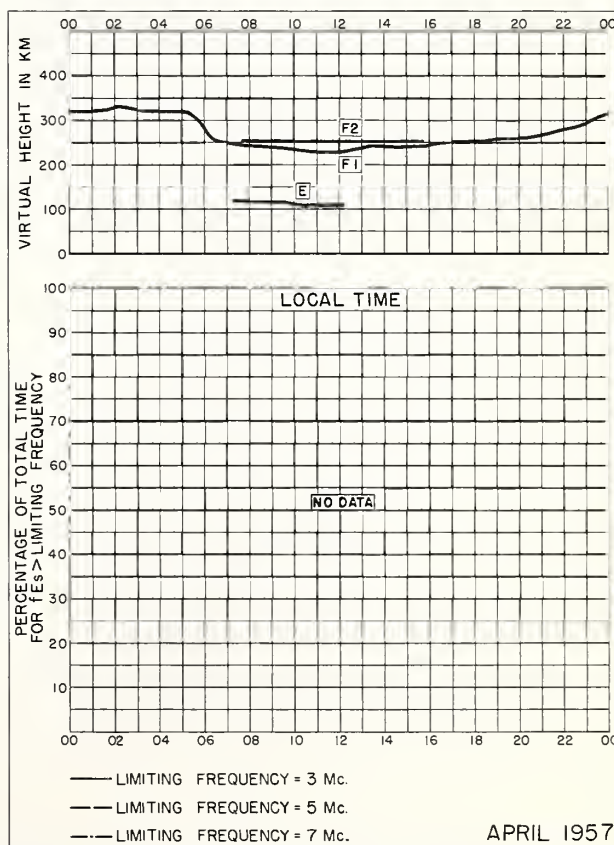


Fig. 132. YUZHNO-SAKHALINSK, U.S.S.R.

APRIL 1957

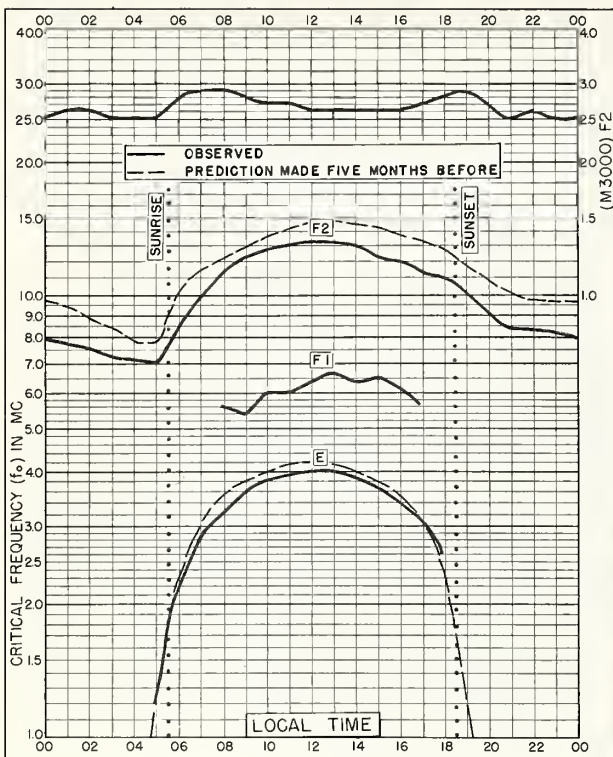


Fig. 133. ASHKHABAD, U.S.S.R.  
37.9°N, 58.3°E

APRIL 1957

Continued: Standard-Endless, Cals.

NBS 503

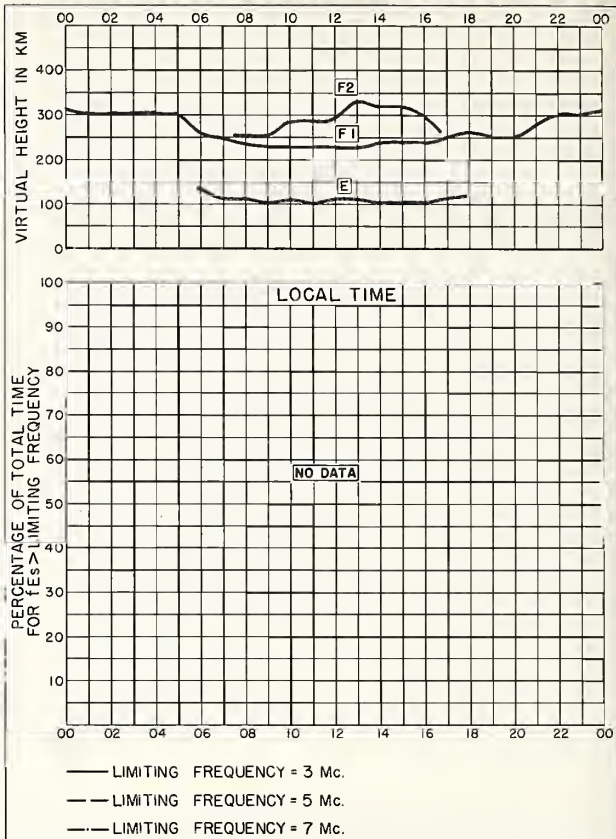


Fig. 134. ASHKHABAD, U.S.S.R.

APRIL 1957

Continued: Standard-Endless, Cals.

NBS 490

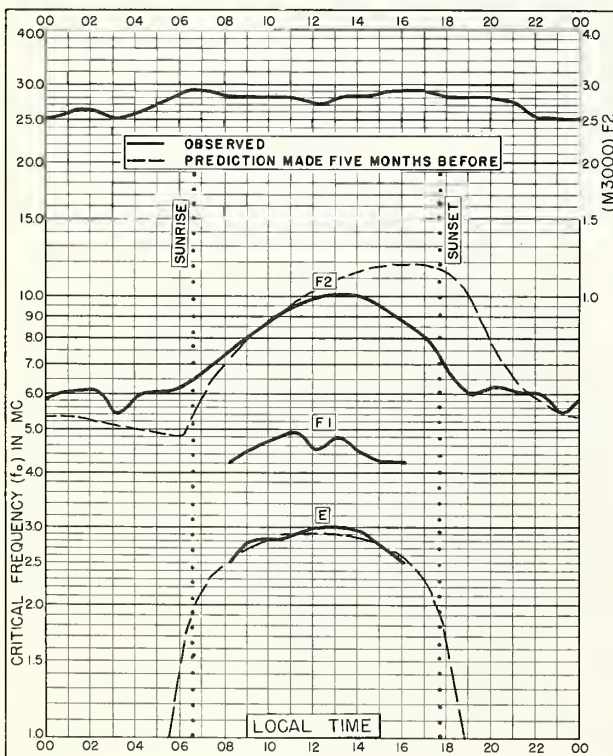


Fig. 135. MURMANSK, U.S.S.R.  
69.0°N, 33.1°E

MARCH 1957

Continued: Standard-Endless, Cals.

NBS 503

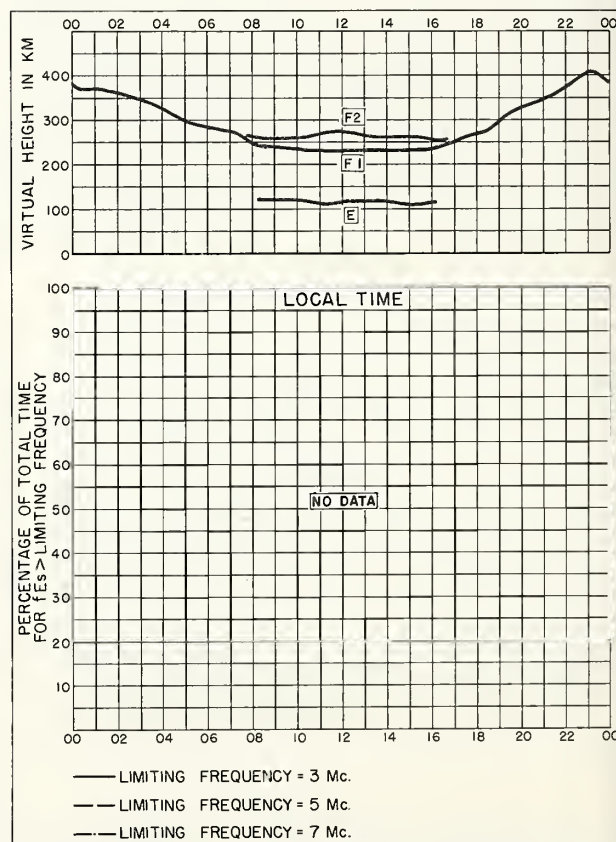


Fig. 136. MURMANSK, U.S.S.R.

MARCH 1957

Continued: Standard-Endless, Cals.

NBS 490



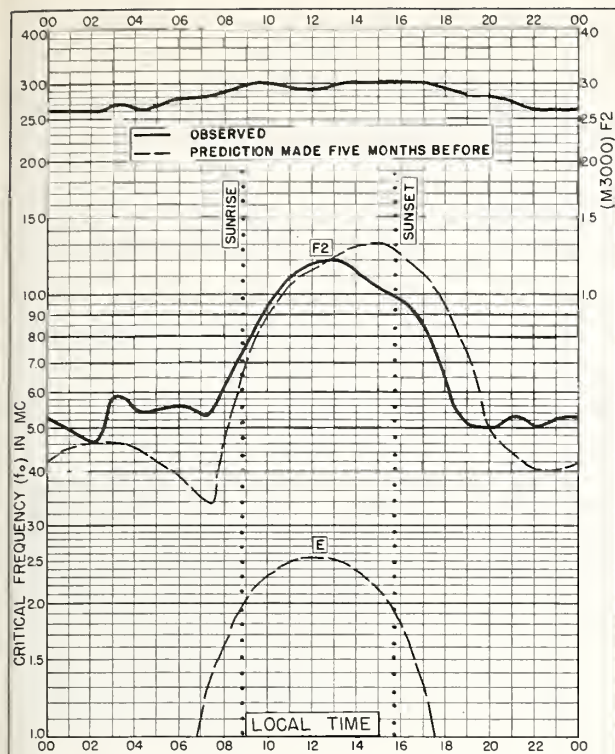


Fig. 137. MURMANSK, U.S.S.R.  
69.0°N, 33.1°E FEBRUARY 1957

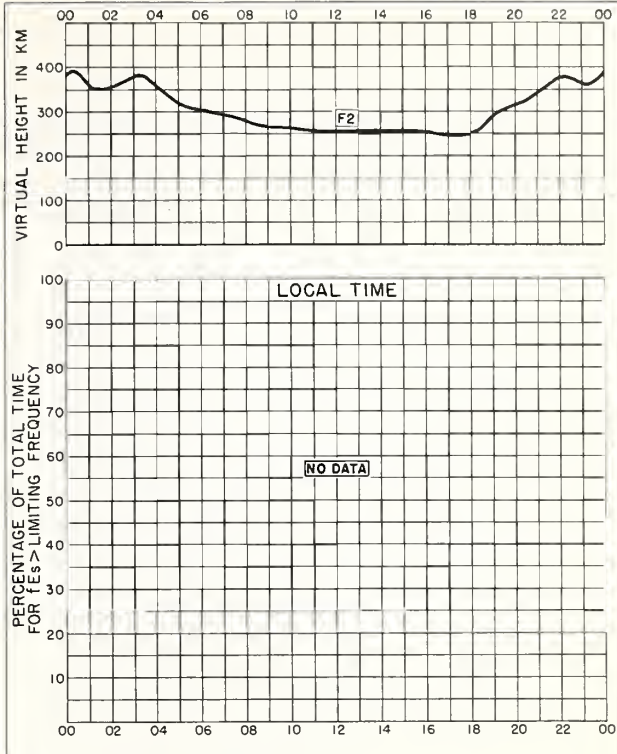


Fig. 138. MURMANSK, U.S.S.R. FEBRUARY 1957

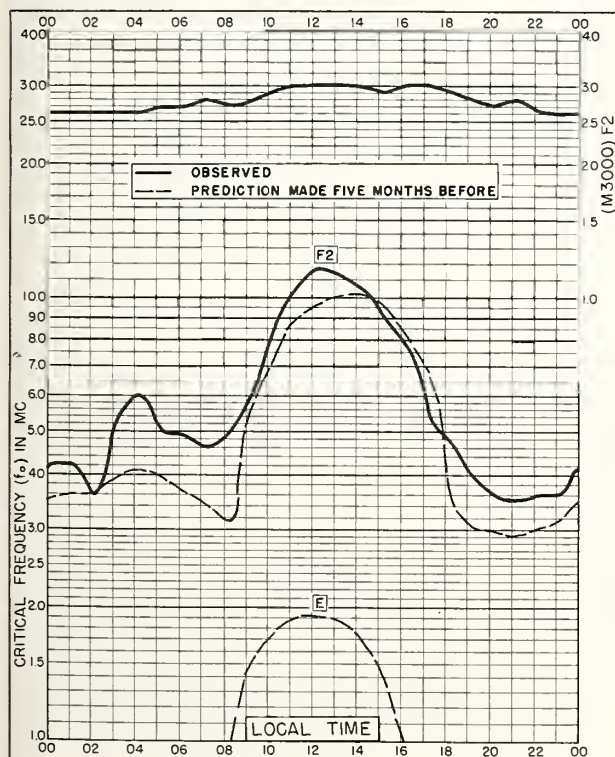


Fig. 139. MURMANSK, U.S.S.R.  
69.0°N, 33.1°E JANUARY 1957

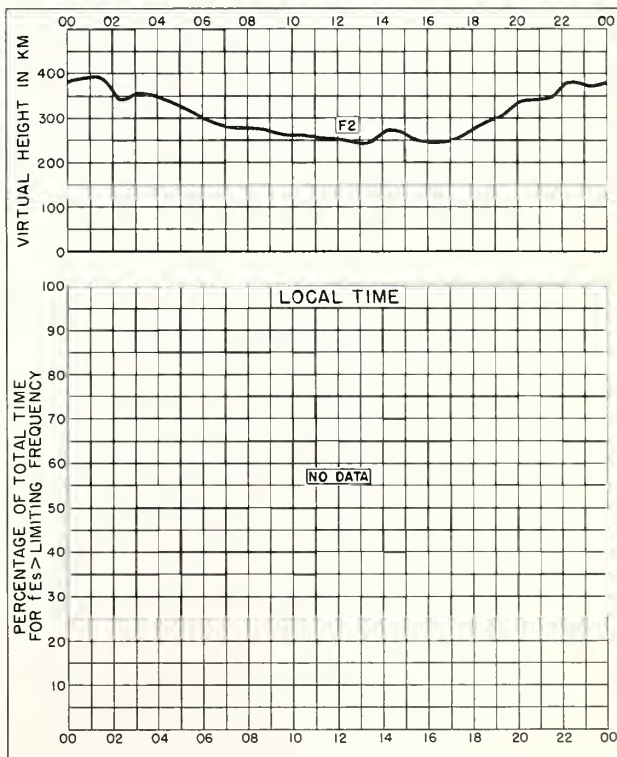


Fig. 140. MURMANSK, U.S.S.R. JANUARY 1957



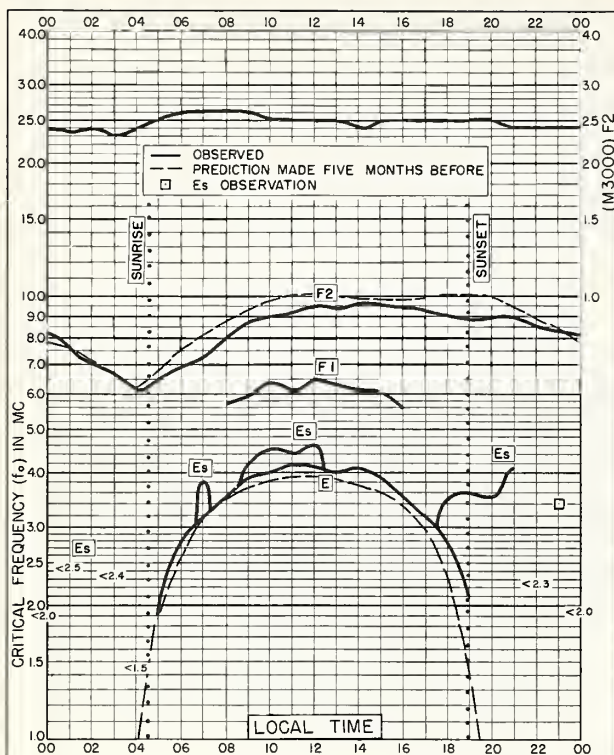


Fig. 141. CHRISTCHURCH, NEW ZEALAND  
43.6°S, 172.8°E NOVEMBER 1956

NBS 503

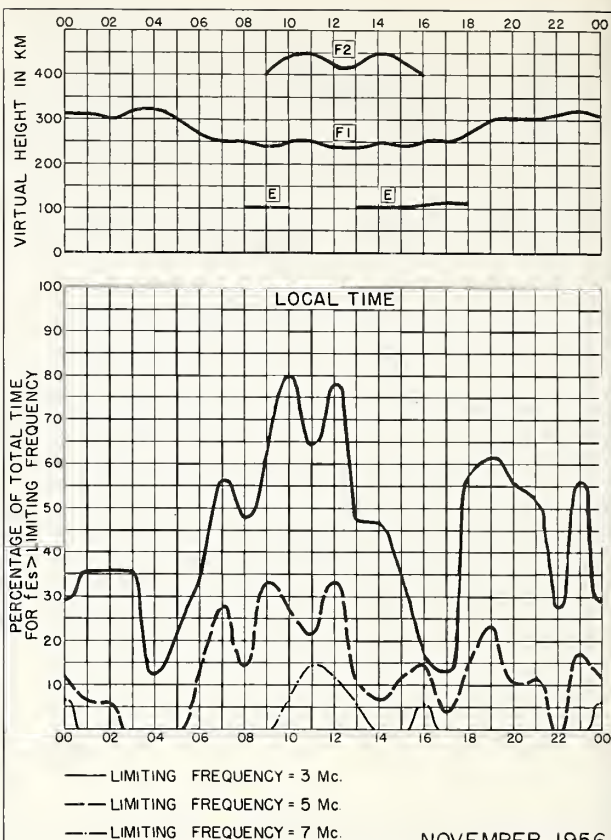


Fig. 142. CHRISTCHURCH, NEW ZEALAND  
NOVEMBER 1956

NBS 490

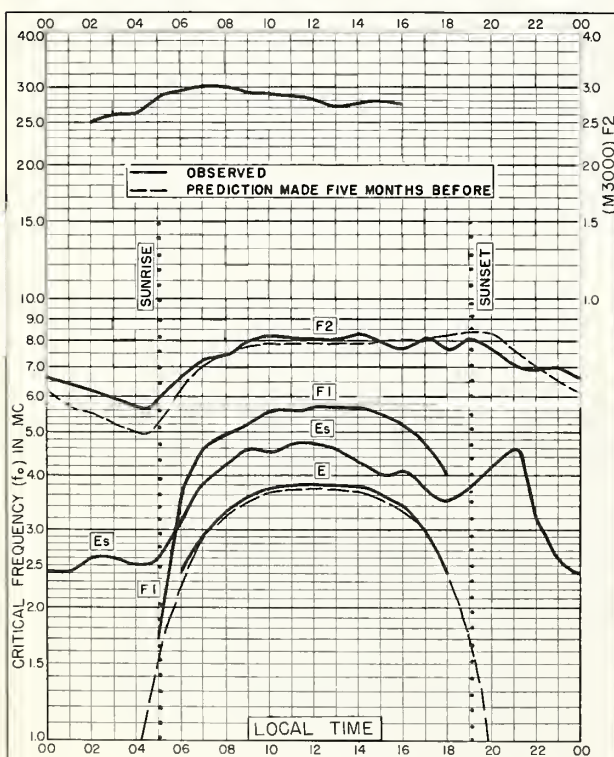


Fig. 143. POITIERS, FRANCE  
46.6°N, 0.3°E AUGUST 1956

NBS 503

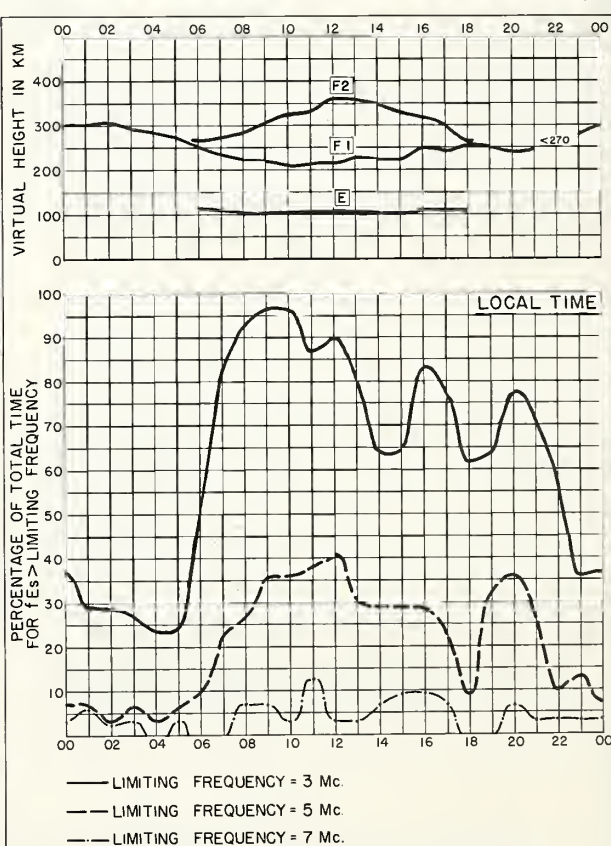


Fig. 144. POITIERS, FRANCE  
AUGUST 1956

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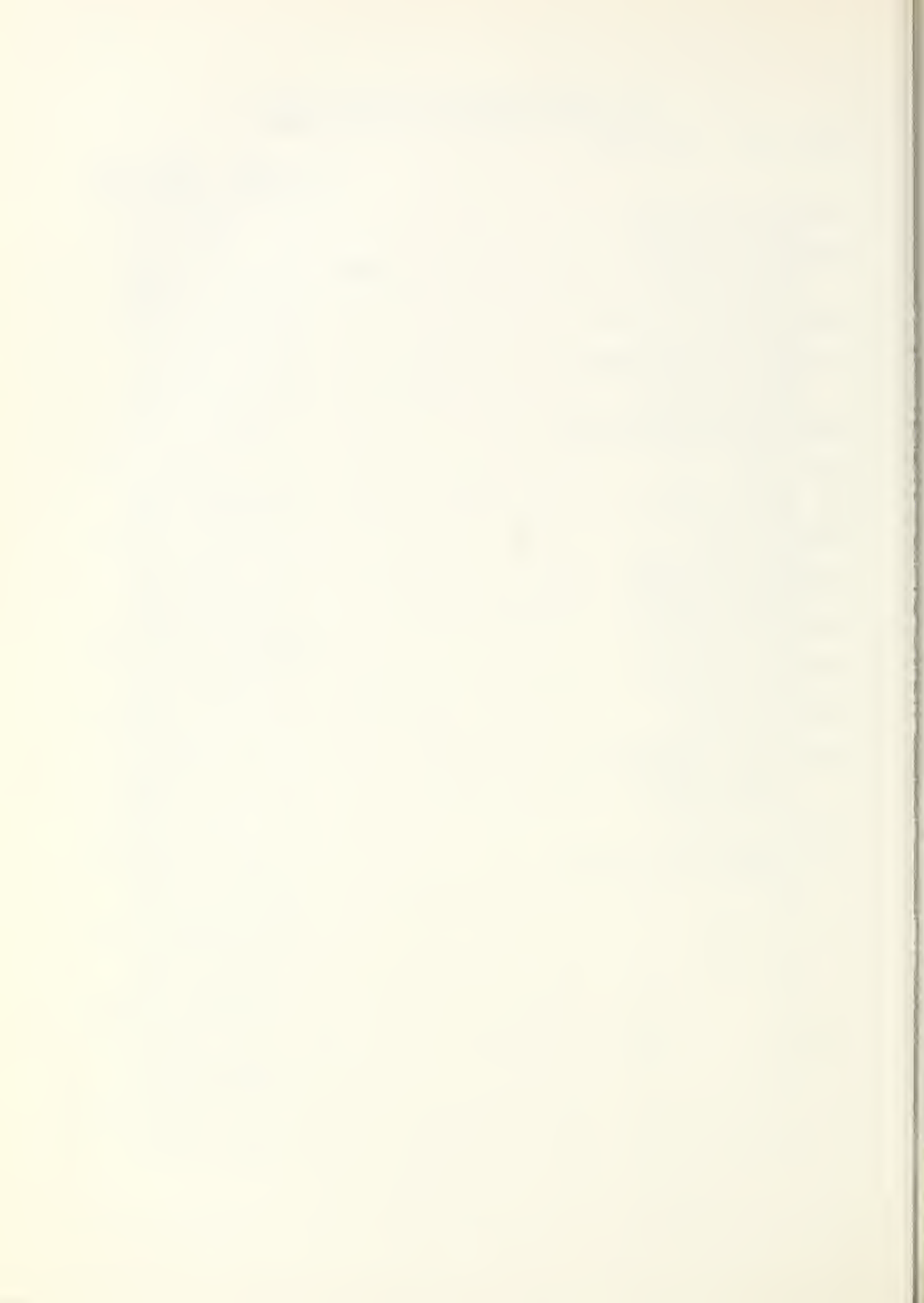
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